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REMOVAL SUPPORT TEAM 3
EPA CONTRACT EP-S2-14-01

November 10, 2016

Mr. Eric Daly, On-Scene Coordinator
U.S. Environmental Protection Agency, Region II
Response & Prevention Branch
2890 Woodbridge Avenue
Edison, New Jersey 08837

EPA CONTRACT NO: EP-S2-14-01
TDD No: TO-0007-0011
DC No: RST3-03-D-0085
SUBJECT: PHASE II REMOVAL ASSESSMENT SAMPLING TRIP REPORT – NIAGARA FALLS BOULEVARD RADIOLOGICAL SITE, NIAGARA FALLS, NIAGARA COUNTY, NEW YORK

Dear Mr. Daly,

Enclosed please find the Phase II Removal Assessmen t Sampling Trip Report for the soil sampling activities conducted at the Niagara Falls Boulevard Radiological Site located in Niagara Falls, Niagara County, New York on March 1 through 3, 2016.

If you have any questions or comments, please contact me at (603) 512-4350.

Sincerely,

WESTON SOLUTIONS, INC.

For: Peter Lisichenko
RST 3 Site Project Manager

Enclosure
cc: TDD File: TO-0007-0011

REMOVAL ASSESSMENT TRIP REPORT

SITE NAME: Niagara Falls Boulevard Radiological Site
DC No.: RST3-03-D-0085
TDD No.: 0007-0011
CERCLIS ID: NYN000206699
EPA ID: A23Q
EVENT DATES: March 1 through 3, 2016

1.0 Site Location: 9524 & 9540 Niagara Falls Boulevard
Niagara Falls, Niagara Falls County, New York
(Refer to Attachment A, Figure 1: Site Location Map)

2.0 Site Description and Background Information

The Niagara Falls Boulevard Radiological Site (the Site) is located in a mixed commercial and residential area of Niagara Falls, New York. The Site consists of two parcels, namely 9524 and 9540 Niagara Falls Boulevard and it encompasses approximately 2.53 acres. Currently, the 9524 Niagara Falls Boulevard property contains a bowling alley and an asphalt parking lot; the 9540 Niagara Falls Boulevard property is occupied by a hardware store, Greater Niagara Building Center, Inc. (GNBC) and an asphalt parking lot. The properties are bordered to the north by a wooded area; to the east by a church; to the south by Niagara Falls Boulevard, beyond which is a residential area; and to the west by a hotel and residential area.

In 1978, the U.S. Department of Energy (DOE) conducted an aerial radiological survey of the Niagara Falls region and identified more than 15 properties having elevated levels of radiation above background levels. It is believed that, in the early 1960s, slag from the Union Carbide facility located on 47th Street in Niagara Falls was used as fill on the properties prior to paving. The Union Carbide facility processed ore containing naturally-occurring high levels of uranium and thorium to extract niobium. The slag contained sufficient quantities of uranium and thorium to be classified as a licensable radioactive source material. Union Carbide subsequently obtained a license from the Atomic Energy Commission (AEC), now the Nuclear Regulatory Commission (NRC), and the State of New York; however, the slag had already been used as fill throughout the Niagara Falls region prior to licensing. Based on the original survey and subsequent investigations, it is believed that the radioactive Union Carbide slag was deposited on the Site.

In September/October 2006 and May 2007, the New York State Department of Environmental Conservation (NYSDEC) conducted radiological surveys of the interior and exterior of both properties on several occasions using gamma detectors, Exploranium-135 and Ludlum Model 2221 Ratemeter/Scaler (Ludlum-2221). With the exception of an office area and storage space at 9540 Niagara Falls Boulevard that was constructed after the original building directly on top of the asphalt parking lot, interior radiation levels obtained with Exploranium-135 were relatively low. The highest reading in the newer area was 115 microroentgen per hour (µR/hr); elsewhere throughout the building, radiation levels generally ranged between 10 and 20 µR/hr. Exterior readings taken at waist height generally ranged between 10 and 350 µR/hr, while the maximum reading of 600 µR/hr was recorded at contact (*i.e.*, at the ground surface). At a fenced area behind the building located at 9540 Niagara Falls Boulevard, waist-high readings ranged between 200 and 450 µR/hr, and at-contact readings ranged between 450 and 750 µR/hr. Elevated readings were also observed on the swath of grass between the 9524 Niagara Falls

Boulevard property and the adjacent property to the west that contains a hotel, and in the marshy area beyond the parking lot behind the buildings. Two biased samples of slag were collected from locations that exhibited elevated static Ludlum-2221 readings: one slag sample collected from an area of loose blacktop indicated a reading of 515,905 counts per minute (cpm) and the second slag sample collected in the marshy area indicated a reading of 728,235 cpm.

During a reconnaissance performed by the New York State Department of Health (NYSDOH) and NYSDEC on July 9, 2013, screening activities with a hand-held pressurized ion chamber (PIC) unit around an area of broken asphalt indicated gamma radiation levels at 200 µR/hr and 500 µR/hr from a soil pile containing slag at the Site. Readings over 600,000 cpm were recorded with a sodium iodide scintillator from the soil and slag pile.

On September 10, 2013, the U.S. Environmental Protection Agency (EPA) and Weston Solutions Inc., Site Assessment Team (SAT), conducted gamma radiation screening of the 9524 Niagara Falls Boulevard property using Ludlum-2221. On December 4 and 5, 2013, further radiological survey information was obtained from the 9524 and 9540 Niagara Falls Boulevard properties, as well as the church property located further east of the two site parcels. The highest gamma radiation screening results were recorded from the exposed soil area in the rear northern portion of the 9540 Niagara Falls Boulevard property. From December 5 through 7, 2013, SAT documented the areas of observed contamination at the Site. The areas of observed contamination were delineated by measuring the gamma radiation exposure rates and determining where the gamma radiation exposure rate around the source equals or exceeds two times (2x) the site-specific background gamma radiation exposure rates. The areas of observed contamination are defined by site-attributable gamma radiation exposure rates, as measured by a survey instrument held 1 meter above the ground surface, which equal or exceed 2x the site-specific background gamma radiation exposure rate. An area of the Site, approximately 168,832 square feet (sq. ft.), indicated gamma radiation levels exceeding 2x the background measurement of 8,391 cpm. PIC data were also collected at several points to confirm the boundary.

On December 11, 2013, SAT collected a total of 16 soil samples, including one field duplicate, and three slag samples, from fifteen boreholes advanced throughout the Site and on the First Assembly Church property, located at 9750 Niagara Falls Boulevard, directly adjacent to the east and northeast portions of the Site, using hollow-stem auger drilling methods. The two soil samples collected on the First Assembly Church property were to document background conditions. At each sample location, soil samples were collected directly beneath slag; at locations where slag was not present, the soil sample was collected at the equivalent depth interval. The soil samples were analyzed by Test America Laboratories (Test America) for target analyte list (TAL) metals; isotopic thorium and isotopic uranium, radium-226 (Ra-226), and radium-228 (Ra-228), by alpha spectroscopy; and radioisotopes by gamma spectroscopy. The slag samples were analyzed for isotopic thorium and isotopic uranium, Ra-226, and Ra-228 by alpha spectroscopy, and radioisotopes by gamma spectroscopy. Analytical results indicated concentrations of radionuclides found in the slag and soil samples to be significantly higher than at background condition.

On April 28, 2014, SAT personnel collected radon and thoron concentration measurements from locations on and in the vicinity of the Site. At the selected locations in background areas, above the source material, and off the source area, radon and thoron concentration measurements in picocuries per liter (pCi/L) were collected with RAD7 radon/thoron detectors. The radon and

thoron measurements were collected at waist height (one meter/3 feet above the ground surface). The measurements included uncertainty values, which were taken into account to calculate adjusted concentrations for evaluation of observed release in the air migration pathway. There were no radon or thoron concentration measurements that exceeded the site-specific background concentration, nor were there any adjusted concentr ations that equaled or exceeded a value two standard deviations above the mean site-specific ba ckground concentration for these radionuclides in this sample type (*i.e.*, there is no evidence of an observed release to ai r from site sources).

On July 21 through 23, 2015, as part of a Removal A ssessment of the Site, EPA and Weston Solutions Inc., Removal Support Team 3 (RST 3) cond ucted a radiological survey of on-site properties, including 9524 Niagara Falls Boulevard (Property N001), 9540 Niagara Falls Boulevard (Property N002), and an off-site background location at 9750 Niagara Falls Boulevard (Property N003). The presence/absence of radon/thor on gases were determined using RAD7 radon/thoron detectors and gamma radiation levels w ere determined using Fluke Pressurized Ionization Chamber (FPIC) Model 451P, Ludlum Model 2241 (Ludlum-2241), and Reuter-Stokes RSS-131ER High Pressure Ion Chamber (HPIC) gamma survey meters. Specific isotopes were identified using a Berkeley Nucleonics Corpora tion (BNC) SAM 940 ™ (SAM-940) portable radioisotope identification system. Radiol ogical survey measurements collected from suspected source areas at Properties N001 and N002 were compared with measurements collected from a background location at property N0 03. The background readings collected with each survey instrument were as follows (instrument and measured reading in parenthesis): Ludlum-2241 (7,000 to 8,000 cpm), FPIC (waist-high: 7 to 10 µR/hr, contact: 9 to 10 µR/hr), HPIC (8.24 µR/hr), and RAD7 (less than 4 pCi/L).

Gamma measurements collected with the Ludlum-2241 i n the single building at Property N001 indicated readings ranging from 6,400 cpm around th e pin setter area to 45,000 cpm (more than 5x the upper limit background value) in the rear ve stibule. Gamma readings in most areas of the building at Property N001 were generally above back ground values. Gamma readings collected with the Ludlum-2241 in the single building at Prop erty N002 ranged from 6,200 cpm in the showroom to 200,000 cpm (more than 23x the upper li mit background value) in one storage room located southwest of the building. Generally, gamma readings in most areas of the building at Property N002 varied from background to several times above the background upper limit value. Gamma survey conducted with the Ludlum -2241 in exterior areas throughout the Site, including asphalt-paved and unpaved areas of both Properties N001 and N002, indicated gamma readings ranging from 10,500 cpm (at a locati on on the southwest side of Property N001 near the adjacent hotel parking lot) to 600,000 cpm (more than 70x the background upper limit value) at a fenced area located behind Property N00 2. Gamma readings collected in exterior areas of the Site were generally more than 2x the background value.

The HPIC gamma measurement collected in the rear ve stibule of Property N001 was 18.48 µR/hr, which was more than 2x the background readin g collected with this instrument. The HPIC gamma measurements collected in the single bui lding at Property N002 were more than 4x the background value at four hotspots, including a location in one storage room southwest of the building, a location near the southern access to th e middle warehouse space, a location in a storage space northwest of the building, and a drai nage trench at the furthest north warehouse space.

The highest FPIC gamma measurements collected at Property N001 was from a walk-in cooler, with waist-high measurements ranging from 8 to 13 µR/hr and contact measurements ranging from 14 to 19 µR/hr. These measurements were above the background readings collected with this instrument. At Property N002, FPIC gamma measurements were more than 2x the background value in the entire area of the warehouse space located furthest north, portions north and center of the middle warehouse space, areas in three storage rooms northwest and west, respectively, of the building, and areas in an office space and storage room located southwest of the building. The four hotspots identified in the building at Property N002 had waist-high measurements ranging from 24 to 100 µR/hr and contact measurements ranging from 36 to 160 µR/hr. One radionuclide, Th-232, was identified with the SAM-940 in the drainage trench located in the furthest north warehouse space at Property N002. Radon/thoron survey results indicated normal radon levels in both on-site buildings.

On August 10 through 13, 2015, RST 3 conducted additional Removal Assessment of the Site. Soil sampling and radiological survey of exterior on-site locations was performed in order to verify potential releases of radiation-containing materials in soil and fill material associated with slag from the former Union Carbide facility, determine radiation source areas, and delineate the extent of on-site radiological contamination. Soil sampling locations were selected based on information from prior SAT site investigation and from radiological survey measurements collected as part of the Phase I Removal Assessment. Gamma measurements collected with the HPIC at all the soil sampling locations ranged from 9.92 µR/hr to 267.44 µR/hr (more than 32x the background value). Radon/thoron survey results indicated normal radon levels at all the soil sampling locations. Thoron concentrations were above background levels and the EPA Site-Specific Action Level of 4 pCi/L in contact measurements taken from six of the seven soil sampling locations and one waist-high measurement at Property N001. Thoron concentrations were also above background levels and the EPA Site-Specific Action Level in contact measurements taken from five of the eight soil sampling locations at Property N002. Waist-high thoron measurements taken at all the soil sampling locations at Property N002 were within normal background levels.

During the August 2015 soil sampling event, a total of 18 soil samples were collected by RST 3 using Geoprobe® technology from locations throughout the Site. Each soil core was screened every 6-inch interval for gamma radiation using Ludlum-2241. Soil samples were selected from the 6-inch interval which exhibited the highest level of gamma radiation and/or where a fill layer was observed and/or at the discretion of the EPA On-Scene Coordinator (OSC). The soil samples were analyzed by Test America of St. Louis, Missouri for TAL metals in accordance with EPA SW846 Method 6010C; total mercury, in accordance with EPA SW846 Method 7471B; isotopic thorium (thorium-228 (Th-228), Th-230, Th-232, and Th-234) and isotopic uranium (uranium-233 (U-233), U-234, U-235, U-236, and U-238), in accordance with DOE alpha spectroscopy Health and Safety Laboratory (HASL)-300 Method A-01 -R; Ra-226 (21-day ingrowth), Ra-228, and other gamma emitting radioisotopes, in accordance with EPA gamma spectroscopy HASL-300 Method GA-01-R. Aqueous rinsate blanks collected to demonstrate proper decontamination of non-dedicated sampling equipment were analyzed for TAL metals, total mercury, isotopic thorium and isotopic uranium, and other gamma emitting radioisotopes by the same methods as the soil samples. Aqueous rinsate blanks were also analyzed for Ra-226 in accordance with EPA SW-846 Method 9315 and Ra-228 by Gas Flow Proportional Counter (GFPC), in accordance with EPA SW-846 Method 9320. Analytical results indicated that the concentrations of Ra-226 in on-site soils were above the EPA Site-Specific Action Level of 2.48 picocuries per gram

(pCi/g). Analytical results also indicated exceedance of manganese, magnesium, iron, and thallium above the EPA Removal Management Levels (RMLs) in at least one or more soil samples.

On August 13, 2015, EPA collected wipe samples as part of the Removal Assessment event from entryways and locations within both on-site buildings. The wipe samples were analyzed by EPA using a Ludlum 3030. For the selected counting durations, the Minimum Detectable Activity (MDA) for 100 square centimeters (cm^2) was determined as 0.80 disintegrations per minute (dpm) and 29.50 dpm, respectively for alpha and beta particle counts. These levels are below 100 dpm and 1,000 dpm, respectively for alpha and beta counts as outlined in New York City Department of Health and Mental Hygiene (NYC DOHMH) Article 175 of the NYC Health Code, "Radiation Control", §175.03 - Release of Materials or Facilities, which was adopted by EPA as the Site-Specific Action Level for alpha and beta counts. Alpha and beta counts for all the wipe samples collected from both on-site buildings were at the natural background level conservatively estimated by counting a blank wipe.

3.0 Removal Assessment Objectives

As part of Removal Assessment activities at the Site, RST 3 was tasked by the EPA with providing a drilling subcontractor to advance up to 14 soil borings through concrete foundation slabs to depths up to 4 feet below ground surface (bgs) at locations determined on-site by the EPA OSC in the single building located on-site at Property N002. RST 3 was also tasked with performing photographic documentation and maintaining a site logbook to document all site activities throughout the Removal Assessment. The analytical results from this sampling event will be utilized by EPA to verify the presence of residual radiological contamination in the building at Property N002, identify additional source areas within the building, delineate the extent of the radioactive contamination in the building, and to assist EPA in determining whether a Removal Action is warranted in the building.

Refer to Attachment D: Photographic Documentation of Site Activities.

4.0 On-Site Personnel

Name	Representing	Duties On-Site
Eric Daly	EPA, Region II	Lead On-Scene Coordinator
Mark Bellis	EPA, Region II	On-Scene Coordinator
Lyndsey Nguyen	EPA, Region II	Radiation Health Physicist
Bernard Nwosu	RST 3, Region II	Team Lead, Site Health & Safety, Written and Photographic Documentation
Peter Lisichenko	RST 3, Region II	Field Support
Randy Steiner	SJB Services, Inc.	RST 3 Subcontractor, Geoprobe Operation
Art Koske	SJB Services, Inc.	RST 3 Subcontractor, Geoprobe Operation
Gary Dunhom	On The Mark	Subcontractor for SJB Services, Inc., Subsurface utilities mark-out
Doreg Miller	On The Mark	Subcontractor for SJB Services, Inc., Subsurface utilities mark-out

EPA – U.S. Environmental Protection Agency
RST 3 - Removal Support Team 3

5.0 Sample Collection Methodology

Soil sampling was conducted in accordance with the EPA Environmental Response Team (ERT)/ Scientific, Engineering, Response & Analytical Serv ices (SERAS) contractor's Standard Operating Procedure (SOP) 2012: *Soil Sampling*. Soil sample locations were selected by the EPA OSC and Radiation Health Physicist (RHP). A Lu dlum-2241 (Serial Number (No.) 249215) with a sodium iodide (NaI) 2x2 scintillator setup was utilized by EPA to identify locations with elevated gamma readings in the singl e building at Property N002, including hotspots which were identified during the August 20 15 Removal Assessment event. At each selected sample location, surface gamma measurement s were collected by EPA with the Ludlum-2241 setup at waist height and at contact. The highest instantaneous reading measured in cpm by the instrument at waist height and at con tact were recorded by RST 3. Utilizing a ground penetrating radar (GPR), all the selected sa mple locations were cleared for subsurface utilities by personnel from On The Mark. RST 3 emp loyed the services of a drilling company, SJB Services, Inc. (SJB), located in Hamburg, New Y ork to advance a total of 14 soil borings in the single building at Property N002. Prior to adv ancing the soil borings, SJB utilized a coring equipment to cut through the concrete foundation sl ab of the building at each sample location in order to expose the subsurface soil. In accordance with EPA ERT/SERAS SOP 2050: *Geoprobe Operation*, SJB utilized a jack Hammer and Macro-Core ® setup to facilitate soil sample collection by extracting soil cores from depths 0 t o 4 feet bgs at each soil sample location. RST 3 collected grab soil samples directly from the soi l cores at intervals corresponding to 0 to 6 inches, 6 to 12 inches, 12 to 18 inches, 18 to 24 inches, 24 to 30 inches, 30 to 36 inches, 36 to 42, and 42 to 48 inches bgs. Unutilized sections of th e soil cores were placed back into the respective bore holes in reverse order and then filled with garden soil and bentonite.

Decontamination of non-dedicated sampling equipment (*i.e.* Maco-Core ® cutting shoe) was conducted in accordance with EPA ERT/SERAS SOP 2006 : *Sampling Equipment Decontamination* and was performed before and after the sampling ev ent and between soil sampling locations, and it consisted of an industri al soap (Alconox ®) solution scrub, tap water rinse, steam-clean with deionized water, air dry, a nd screening with Ludlum-2241 for residual radiological contamination. In order to confine po tential surface runoff to areas of contamination, the decontamination fluid was discar ded in the borehole location indicating the highest levels of contamination based on Ludlum-2241 screening data.

At each sample location, SJB utilized new acetate s leeves to extract the soil cores. The physical characteristics and description of the soils in eac h core were documented in boring logs prior to sample collection. All the soil samples were collec ted by RST 3 using dedicated disposable plastic scoops, placed directly into re-sealable pl astic bags, homogenized in the plastic bags, and then placed into glass sample jars. RST 3 utilized the Ludlum-2241 setup to collect and document the highest instantaneous gamma exposure r ate measurement in cpm for each jarred soil sample. Fresh nitrile gloves were donned betw een each sampling interval and location. A rinsate blank was collected each day of sampling to demonstrate adequate decontamination of non-dedicated sampling equipment. The soil samples and rinsate blanks were collected for definitive data and quality assurance/quality contr ol (QA/QC) objectives. Field duplicates and matrix spike/matrix spike duplicate (MS/MSD) sample s were collected at the rate of 1 per 20 field samples. All sample information was transcrib ed into EPA's SCRIBE database, an environmental data management system, from which th e sample labels and chain of custody (COC) records were generated. All the soil and aqu eous samples were stored on ice in a cooler

and were submitted to an RST 3-procured laboratory, Pace Analytical Services, Inc. (PACE), located in Greensburg, Pennsylvania for analyses.

Refer to Attachment B, Table 3: Property N002 Soil Boring Logs Summary Table.

6.0 Laboratory Receiving Samples

The following laboratories were utilized during the March 2016 sampling event:

Sample Matrix	Analysis	Laboratory
Soil	Isotopic thorium, isotopic uranium, and other alpha emitting actinides via alpha spectroscopy HASL-300 Method U-02. Radium-226, radium-226 (in-growth), radium-228, and other gamma emitting radioisotopes via gamma spectroscopy EPA Method 901.1 modified	Pace Analytical Services 1638 Roseytown Road, Suite 2,3,4 Greensburg PA 15601
Aqueous	Isotopic thorium and isotopic uranium via HASL-300 Method U-02. Radium-226 via EPA Method 903.1 and radium-228 via EPA Method 904.0	

7.0 Sample Collection and Dispatch Summary

On March 1, 2016, RST 3 collected a total of 35 soi l samples, including three field duplicates. One aqueous rinsate blank was collected at the end of the sampling day. On March 2, 2016, RST 3 collected a total of 51 soil samples, including three field duplicates. One aqueous rinsate blank was collected at the end of the sampling day. On M arch 3, 2016, RST 3 collected a total of 35 soil samples. One aqueous rinsate blank was collected at the end of the sampling day. A total of 118 soil samples (including six field duplicates) a nd three rinsate blanks were collected during this event from the single building at Property N002.

On March 4, 2016, all 118 soil samples and three ri nsate blanks collected on-site were shipped via Fedex airbill No. 8022-3553-9513 under chain of custody (COC) record No. 2-030416-165927-005 to PACE for analyses. All the soil samp les were submitted for laboratory analysis of isotopic thorium (Th-228, Th-230, Th-232, and Th -234) and isotopic uranium (U-233, U-234, U-235, U-236, and U-238), and other alpha emitting actinides via alpha spectroscopy Environmental Measurements Laboratory (EML) HASL-30 0 Method U-02; Ra-226 (in-growth), Ra-228, and other gamma emitting radioisotopes via gamma spectroscopy EPA Method 901.1 modified. Aqueous rinsate blanks were submitted for laboratory analysis of isotopic thorium and isotopic uranium via EML HASL-300 Method U-02; Ra-2 26 via EPA Method 903.1 and Ra-228 via EPA Method 904.0.

Refer to Attachment B, Table 1: Property N002 Sampl e Collection Summary Table and Attachment C: Chain of Custody Record and FedEx Airbill.

8.0 Screening Results Summary

Sample location surface screening measurements coll ected at two presumed background locations, N002-SB001 (Wood Work Area) and N002-SB0 02 (Storage-3), within the single building at Property N002 indicated gamma readings ranging from 9,200 to 9,800 cpm at waist height (W) and 9,200 to 10,200 cpm at contact (C). Sample location surface screening measurements collected at the remaining 12 sample l ocations selected by EPA within the building indicated elevated gamma readings which we re above the background values. The

highest sample location surface screening measureme nts (W= 127,000 cpm, C= 193,000cpm) were collected from N002-SB007 (Storage-2).

Gamma measurements of jarred subsurface soil sample s collected 0 to 6 inches bgs indicated elevated levels of gamma radiation above the backgr ound values in nine of the 14 soil samples. Gamma measurements of jarred subsurface soil sample s collected 6 to 12 inches bgs indicated elevated levels of gamma radiation above the backgr ound values in two of the 14 soil samples. Gamma measurements of jarred subsurface soil sample s collected at all the sampling intervals from N002-SB012 (Warehouse-3 near drainage trench) and N002-SB014 (near the southern access of Warehouse-2) did not indicate gamma readi ngs that were above background. It is noteworthy that sample location surface screening m easurements collected at N002-SB012 and N002-SB014 indicated elevated gamma readings above the background values. Gamma measurements of jarred subsurface soil samples coll ected beyond 12 inches bgs at all the sample locations were at normal background levels.

Refer to Attachment A, Figure 2: Property N002 Samp le Location and Soil Sample Screening Results Map and Attachment B, Table 2: Property N00 2 Sample Location and Soil Sample Screening Results Summary Table

9.0 Analytical Results Summary

The validated analytical results for all the soil a nd aqueous rinsate blanks collected during this event from the single on-site building at Property N002 were compared with the EPA Site-Specific Action Levels for the target radionuclides . The main contaminants of concern are Ra-226 and Ra-228.

Based upon the validated analytical results, the co ncentration of Ra-226 was detected above the EPA Site-Specific Action Level of 2.48 pCi/g in 12 soil samples collected 0 to 6 inches bgs, including (sample number and concentration in paren thesis) N002-SB003-0006-01 (41.2 pCi/g), N002-SB004-0006-01 (36.74 pCi/g), N002-SB005-0006-0 1 (125.6 pCi/g), N002-SB006-0006-01 (39.14 pCi/g), N002-SB007-0006-01 (63.72 pCi/g), N002-SB008-0006-01 (3.12 pCi/g), N002-SB009-0006-01 (21.27 pCi/g), N002-SB010-0006-0 1 (6.46 pCi/g), N002-SB011-0006-01 (6.88 pCi/g), N002-SB012-0006-01 (4.05 pCi/g), N002-SB013-0006-01 (2.93 pCi/g), and N002-SB014-0006-01 (15.61 pCi/g). The concentration of Ra-226 was detected above the EPA Site-Specific Action Level of 2.48 pCi/g in seven soil s amples collected 6 to 12 inches bgs, including N002-SB003-0612-01 (2.76 pCi/g), N002-SB007-0612-01 (4.16 pCi/g), N002-SB008-0612-01 (3.15 pCi/g), N002-SB009-0612-01 (3.48 pCi/g), N002 -SB010-0612-01 (5.23 pCi/g), N002-SB011-0612-01 (6.68 pCi/g), and N002-SB013-0612-01 (10.98 pCi/g). The concentration of Ra-226 was not detected above the EPA Site-Specific Action Levels of 2.48 pCi/g in any soil sample collected at the two presumed background locations (N002-SB001 and N002-SB002) and soil samples collected beyond 12 inches bgs at the remaining 12 sample locations except for N002-SB013-1218-01 (3.66 pCi/g).

Based upon the validated analytical results, the co ncentration of Ra-228 was detected above the EPA Site-Specific Action Level of 15.9 pCi/g in nin e soil samples collected 0 to 6 inches bgs, including N002-SB003-0006-01 (123.78 pCi/g), N002-S B004-0006-01 (85.23 pCi/g), N002-SB005-0006-01 (437.8 pCi/g), N002-SB006-0006-01 (15 0.13 pCi/g), N002-SB007-0006-01 (268.39 pCi/g), N002-SB009-0006-01 (61.04 pCi/g), N 002-SB010-0006-01 (16.19 pCi/g), N002-SB011-0006-01 (30.51 pCi/g), and N002-SB014-00 06-01 (35.09 pCi/g). The

concentration of Ra-228 was not detected above the EPA Site-Specific Action Levels of 15.9 pCi/g in any soil sample collected at the two presumed background locations (N002-SB001 and N002-SB002) and soil samples collected beyond 6 inches bgs at the remaining 12 sample locations except for N002-SB011-0612-01 (19.89 pCi/g) and N002-SB013-0612-01 (29.19 pCi/g).

Based upon the validated analytical results, the concentration of potassium-40 (K-40) was detected above the EPA Site-Specific Action Level of 25.9 pCi/g in two soil samples collected 0 to 6 inches bgs, including N002-SB001-0612-01 (27.55 pCi/g) and N002-SB005-0612-01 (26.79 pCi/g). The concentration of K-40 was detected above the EPA Site-Specific Action Level of 25.9 pCi/g in five soil samples collected 12 to 18 inches bgs, including N002-SB001-1218-01 (26.35 pCi/g), N002-SB003-1218-01 (26.42 pCi/g), N002-SB005-1218-01 (28.73 pCi/g), N002-SB006-1218-01 (29.62 pCi/g), and N002-SB007-1218-01 (27.55 pCi/g). The concentration of K-40 was detected above the EPA Site-Specific Action Level of 25.9 pCi/g in four soil samples collected 18 to 24 inches bgs, including N002-SB001-1824-01 (29.93 pCi/g), N002-SB003-1824-01 (27.65 pCi/g), N002-SB006-1824-01 (31.54 pCi/g), and N002-SB007-1824-01 (28.05 pCi/g). The concentration of K-40 was not detected above the EPA Site-Specific Action Level of 25.9 pCi/g in any soil sample collected at the two presumed background locations (N002-SB001 and N002-SB002) and soil samples collected beyond 24 inches bgs at the remaining 12 sample locations.

Although no Site-Specific Action Level was provided by EPA for the aqueous samples, based on the validated analytical results, radioisotope concentrations were generally not detected.

Refer to Attachment A, Figure 3: Property N002 Soil Analytical Results Map (Radium Only), Attachment B, Table 4: Property N002 Validated Soil Analytical Results Summary Table – Radioisotopes, and Attachment E: Data Validation Memo - Soil Analytical Results (Radioisotopes).

Report prepared by: _____ 11/10/2016

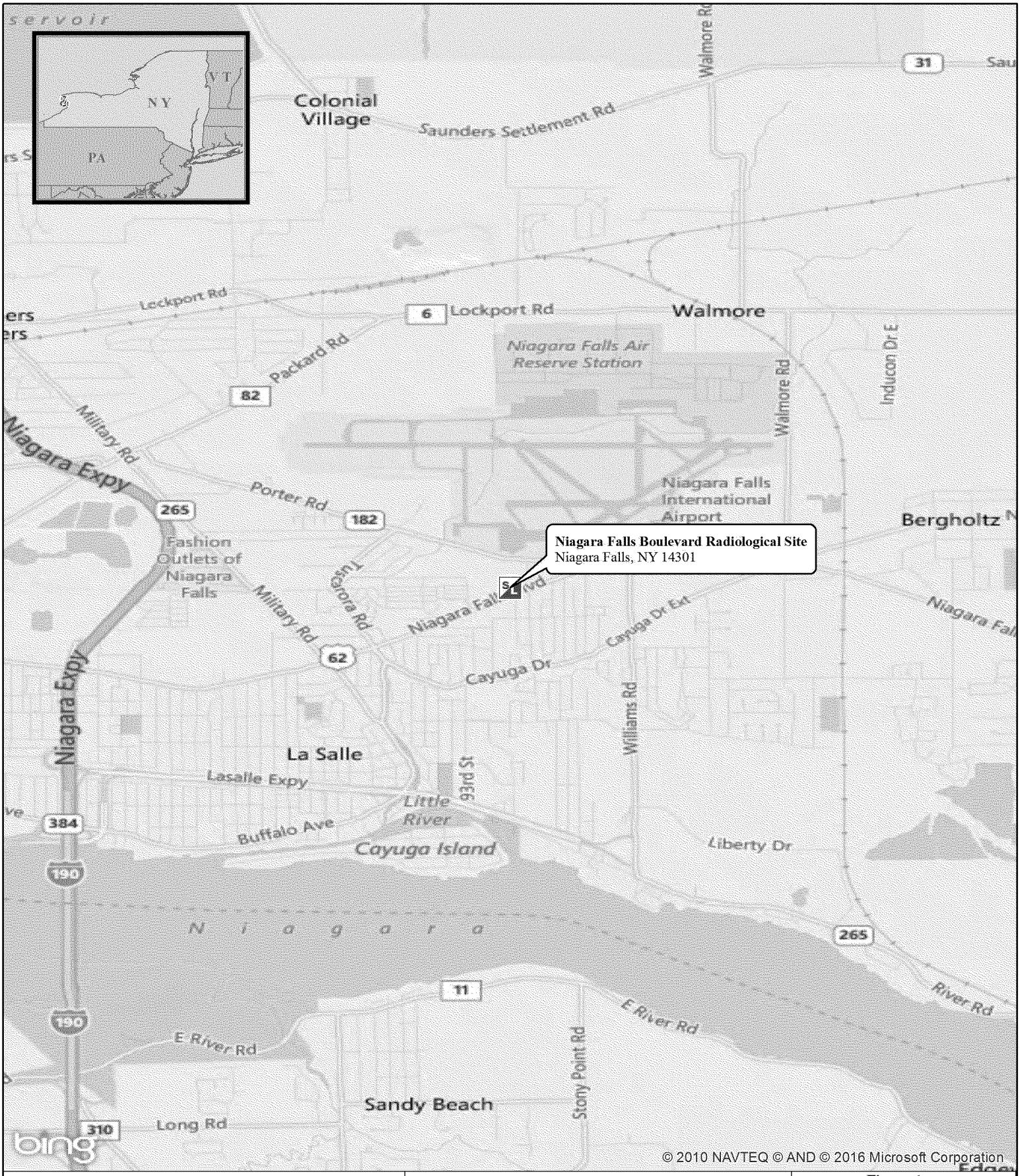
Bernard Nwosu Date
RST 3 Site Project Manager

Report reviewed by: _____ 11/10/2016

Timothy Benton Date
RST 3 Operations Leader

ATTACHMENT A

Figure 1: Site Location Map
Figure 2: Property N002 Sample Location and Soil Sample Screening Results Map
Figure 3: Property N002 Soil Analytical Results Map (Radium Only)



Legend

Site Location

N

0 0.275 0.55 1.1 1.65 2.2 Miles

Weston Solutions, Inc.
Federal East Division

In Association With
Scientific and Environmental Associates, Inc.,
Environmental Compliance Consultants, Inc.,
Avatar Environmental, LLC, On-Site Environmental,
Inc.and Sovereign Consulting, Inc

Figure 1:
Site Location Map

Niagara Falls Boulevard Radiological Site
Niagara Falls, New York

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL SUPPORT TEAM 3
CONTRACT # EP-S2-14-01

DATE MODIFIED: 9/6/2016

GIS ANALYST:	T. Benton
EPA OSC:	E. Daly
RST SPM:	P. Lisichenko
FILENAME:	140723_SITELOCATIONMAP.MXD

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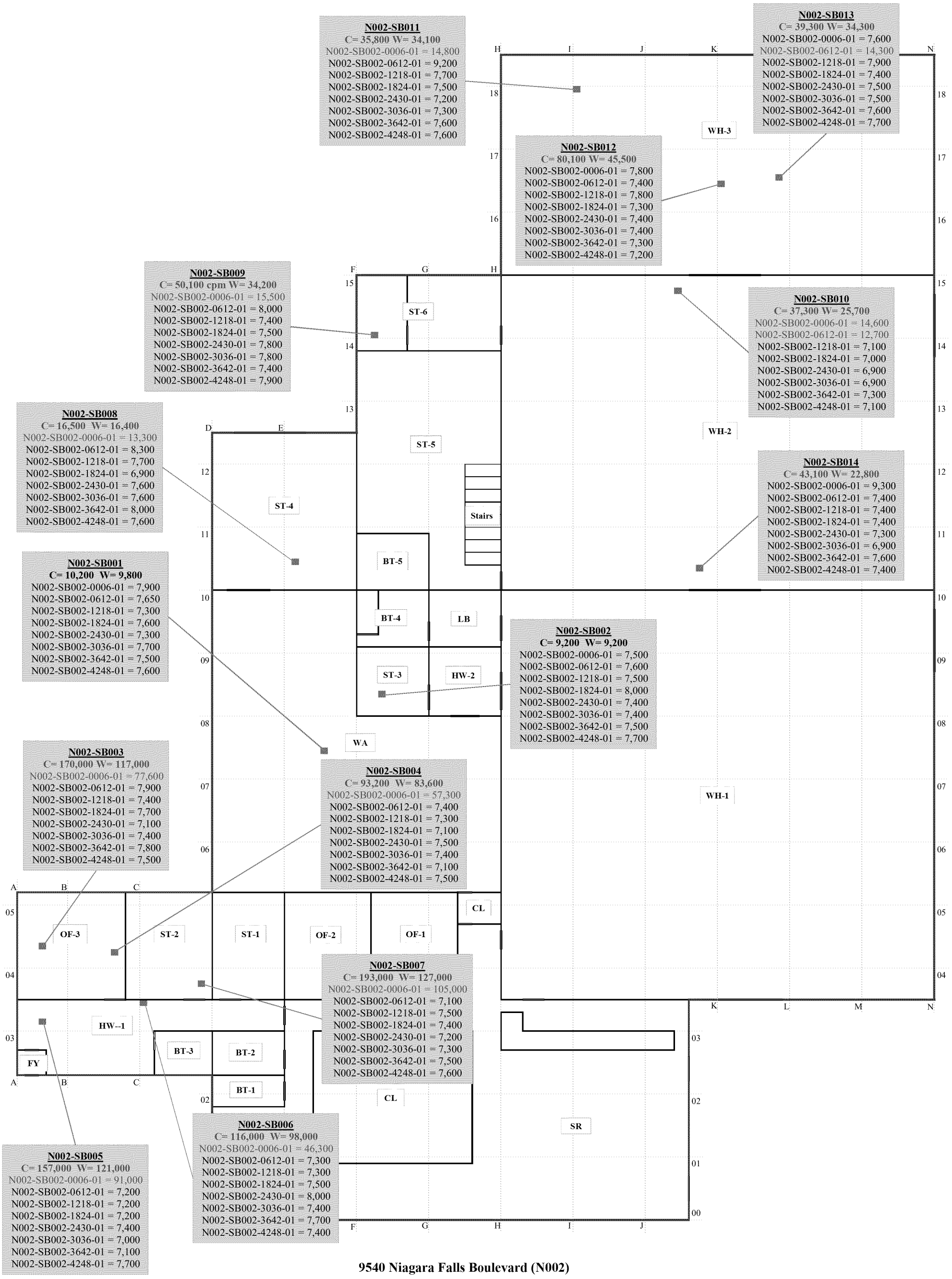


9540 Niagara Falls Boulevard (N002)

Legend

- Soil Sample Location
- Exterior Wall
- Interior Wall
- Transect/ Row Grid lines
- OF - Office
- ST - Storage
- WH - Warehouse
- HW - Hallway
- CL - Customer Lounge
- CR - Communications Room
- WA - Wood Work Area
- FY - Foyer
- BT - Bathroom
- LB - Lobby
- SR - Showroom

Sample location screening results collected at waist level (W) and at contact (C)
Gamma screening was conducted using Ludlum-2241 .
Gamma screening results are presented in counts perminutes (cpm).
Backgound values (W= 9,200 to 9,800 cpm, C= 9,200 to 10,200 cpm.
Values in red exceed backgound values.

Weston Solutions, Inc.

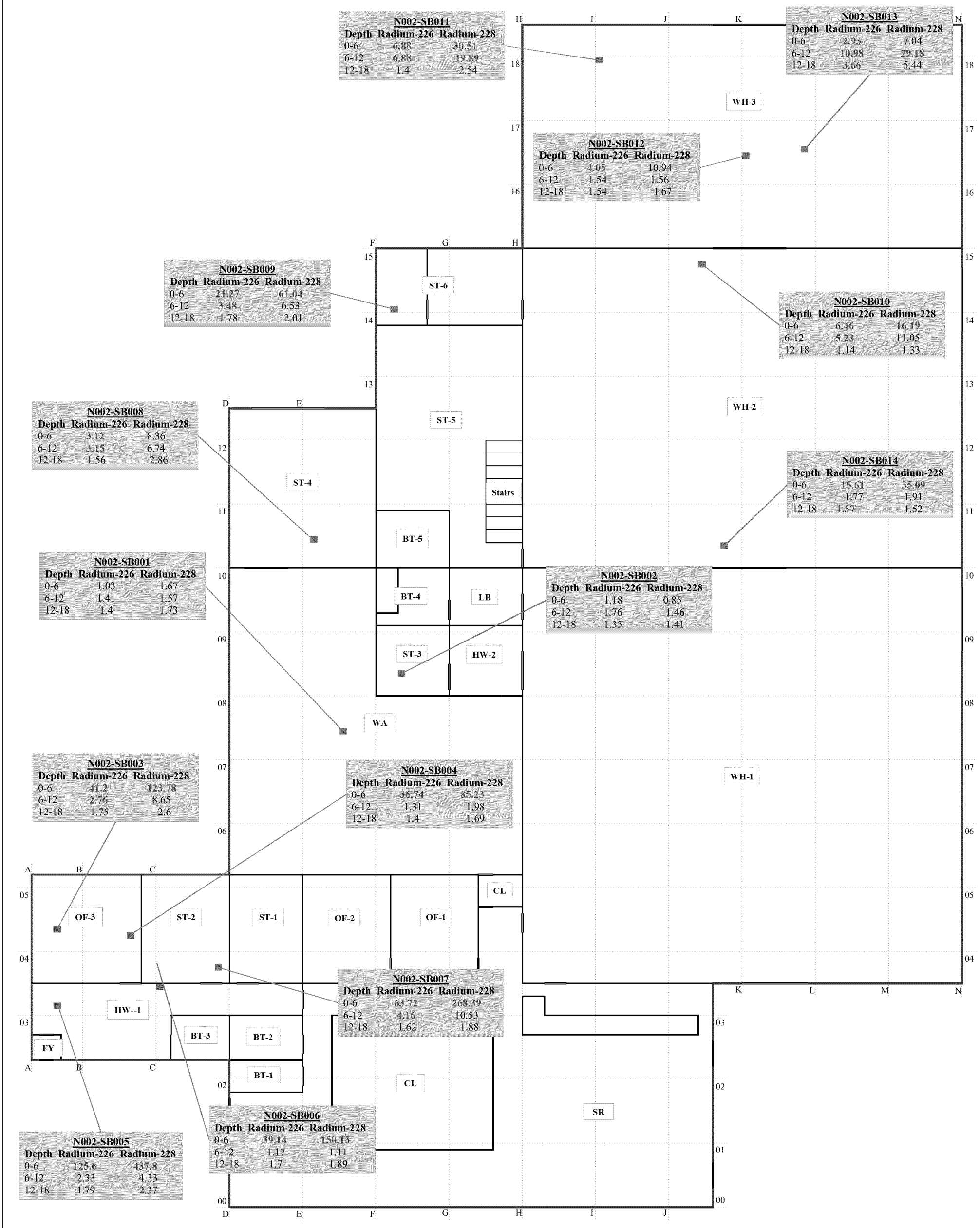
In Association With Scientific and Environmental Associates, Inc.,
Environmental Compliance Consultants, Inc.,
Avatar Environmental, LLC,
On-Site Environmental, Inc., and
Sovereign Consulting, Inc.

Figure 2: Property N002 Sample Location and Soil Sample Screening Results Map

Niagara Falls Boulevard Radiological Site
Niagara Falls, New York

U.S. ENVIRONMENTAL PROTECTION AGENCY
Removal Support Team 3
CONTRACT # EP-S2-13-01

EPA OSC:	E. DALY
RST SPM:	P. LISICHENKO
PROJECT #:	30400.031.007.3011



9540 Niagara Falls Boulevard (N002)

Legend

- Soil Sample Location
- Exterior Wall
- Interior Wall
- Transect/ Row Grid lines
- OF - Office
- ST - Storage
- WH - Warehouse
- HW - Hallway
- CL - Customer Lounge
- CR - Communications Room
- WA - Wood Work Area
- FY - Foyer
- BT - Bathroom
- LB - Lobby
- SR - Showroom

Results presented in picoCurie per gram (pCi/g).
Depth measurements presented in inches below bottomof concrete slab.
U.S. Environmental Protection Agency's (EPA) Site-Specific Action Level for Radium-226 = 2.48 pCi/g, Radium-228 = 15.9 pCi/g.
Values in red exceed the EPA Site-Specific Action level for each radionuclide.

Weston Solutions, Inc.

In Association With Scientific and Environmental Associates, Inc.,
Environmental Compliance Consultants, Inc.,
Avatar Environmental, LLC,
On-Site Environmental, Inc., and
Sovereign Consulting, Inc.

Figure 3: Property N002 Soil Analytical Results Map (Radium Only)

Niagara Falls Boulevard Radiological Site
Niagara Falls, New York

U.S. ENVIRONMENTAL PROTECTION AGENCY
Removal Support Team 3
CONTRACT # EP-S2-13-01

EPA OSC:	E. DALY
RST SPM:	P. LISICHENKO
PROJECT #:	30400.031.007.3011

ATTACHMENT B

Table 1: Property N002 Sample Collection Summary Table
Table 2: Property N002 Sample Location and Soil Sample Screening Results Summary Table
Table 3: Property N002 Soil Boring Logs Summary Table
Table 4: Property N002 Validated Soil Analytical Results Summary Table - Radioisotopes

Table 1
Property N002 Sample Collection Summary Table
Niagara Falls Boulevard Radiological Site
Niagara Falls, Niagara County, New York
March 1 through 3, 2016

Sample Date	Sample Location No.	Location Description	RST 3 Sample No.	Depth Interval (inches)	Sample Matrix	Sample Type	Laboratory Analyses	Lab QC
3/1/2016	N002-SB010	Warehouse-2 North	N002-SB010-0006-01	0 - 6	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB010-0612-01	6 - 12	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB010-1218-01	12 - 18	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB010-1218-02	12 - 18	Soil	Field Duplicate	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB010-1824-01	18 - 24	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N MS/MSD MS/MSD
			N002-SB010-2430-01	24 - 30	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB010-2430-02	24 - 30	Soil	Field Duplicate	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB010-3036-01	30 - 36	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N MS/MSD MS/MSD
			N002-SB010-3642-01	36 - 42	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB010-3642-02	36 - 42	Soil	Field Duplicate	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB010-4248-01	42 - 48	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N MS/MSD MS/MSD
3/1/2016	N002-SB011	Warehouse-3 West	N002-SB011-0006-01	0 - 6	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB011-0612-01	6 - 12	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB011-1218-01	12 - 18	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB011-1824-01	18 - 24	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB011-2430-01	24 - 30	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB011-3036-01	30 - 36	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB011-3642-01	36 - 42	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB011-4248-01	42 - 48	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N

Notes:
RST 3 - Removal Support Team 3
No. - Number
Lab QC - Laboratory Quality Control
MS/MSD - Matrix spike/matrix spike duplicate

Table 1
Property N002 Sample Collection Summary Table
Niagara Falls Boulevard Radiological Site
Niagara Falls, Niagara County, New York
March 1 through 3, 2016

Sample Date	Sample Location No.	Location Description	RST 3 Sample No.	Depth Interval (inches)	Sample Matrix	Sample Type	Laboratory Analyses	Lab QC
3/1/2016	N002-SB012	Warehouse-3 South	N002-SB012-0006-01	0 - 6	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB012-0612-01	6 - 12	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB012-1218-01	12 - 18	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB012-1824-01	18 - 24	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB012-2430-01	24 - 30	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB012-3036-01	30 - 36	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB012-3642-01	36 - 42	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB012-4248-01	42 - 48	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
3/1/2016	N002-SB013	Warehouse-3 East	N002-SB013-0006-01	0 - 6	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB013-0612-01	6 - 12	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB013-1218-01	12 - 18	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB013-1824-01	18 - 24	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB013-2430-01	24 - 30	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB013-3036-01	30 - 36	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB013-3642-01	36 - 42	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB013-4248-01	42 - 48	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
3/1/2016	NA	NA	RB-N-160301	NA	DI Water	Rinsate Blank	Isotopic Thorium and Uranium Radium-226 Radium-228	N

Notes:
RST 3 - Removal Support Team 3
No. - Number
Lab QC - Laboratory Quality Control
MS/MSD - Matrix spike/matrix spike duplicate

Table 1
Property N002 Sample Collection Summary Table
Niagara Falls Boulevard Radiological Site
Niagara Falls, Niagara County, New York
March 1 through 3, 2016

Sample Date	Sample Location No.	Location Description	RST 3 Sample No.	Depth Interval (inches)	Sample Matrix	Sample Type	Laboratory Analyses	Lab QC
3/2/2016	N002-SB014	Warehouse-2 South	N002-SB014-0006-01	0 - 6	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB014-0612-01	6 - 12	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB014-1218-01	12 - 18	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB014-1824-01	18 - 24	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB014-2430-01	24 - 30	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB014-3036-01	30 - 36	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB014-3642-01	36 - 42	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB014-4248-01	42 - 48	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
3/2/2016	N002-SB001	Wood work area	N002-SB001-0006-01	0 - 6	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB001-0612-01	6 - 12	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB001-1218-01	12 - 18	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB001-1824-01	18 - 24	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB001-2430-01	24 - 30	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB001-3036-01	30 - 36	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB001-3642-01	36 - 42	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB001-4248-01	42 - 48	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N

Notes:
RST 3 - Removal Support Team 3
No. - Number
Lab QC - Laboratory Quality Control
MS/MSD - Matrix spike/matrix spike duplicate

Table 1
Property N002 Sample Collection Summary Table
Niagara Falls Boulevard Radiological Site
Niagara Falls, Niagara County, New York
March 1 through 3, 2016

Sample Date	Sample Location No.	Location Description	RST 3 Sample No.	Depth Interval (inches)	Sample Matrix	Sample Type	Laboratory Analyses	Lab QC
3/2/2016	N002-SB002	Storage-3	N002-SB002-0006-01	0 - 6	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB002-0612-01	6 - 12	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB002-0612-02	6 - 12	Soil	Field Duplicate	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB002-1218-01	12 - 18	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N MS/MSD MS/MSD
			N002-SB002-1824-01	18 - 24	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB002-1824-02	18 - 24	Soil	Field Duplicate	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB002-2430-01	24 - 30	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N MS/MSD MS/MSD
			N002-SB002-3036-01	30 - 36	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB002-3036-02	30 - 36	Soil	Field Duplicate	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB002-3642-01	36 - 42	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N MS/MSD MS/MSD
			N002-SB002-4248-01	42 - 48	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
3/2/2016	N002-SB005	Hallway-1 West	N002-SB005-0006-01	0 - 6	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB005-0612-01	6 - 12	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB005-1218-01	12 - 18	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB005-1824-01	18 - 24	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB005-2430-01	24 - 30	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB005-3036-01	30 - 36	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB005-3642-01	36 - 42	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB005-4248-01	42 - 48	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N

Notes:
RST 3 - Removal Support Team 3
No. - Number
Lab QC - Laboratory Quality Control
MS/MSD - Matrix spike/matrix spike duplicate

Table 1
Property N002 Sample Collection Summary Table
Niagara Falls Boulevard Radiological Site
Niagara Falls, Niagara County, New York
March 1 through 3, 2016

Sample Date	Sample Location No.	Location Description	RST 3 Sample No.	Depth Interval (inches)	Sample Matrix	Sample Type	Laboratory Analyses	Lab QC
3/2/2016	N002-SB008	Storage-4	N002-SB008-0006-01	0 - 6	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB008-0612-01	6 - 12	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB008-1218-01	12 - 18	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB008-1824-01	18 - 24	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB008-2430-01	24 - 30	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB008-3036-01	30 - 36	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB008-3642-01	36 - 42	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB008-4248-01	42 - 48	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
3/2/2016	N002-SB009	Storage-6	N002-SB009-0006-01	0 - 6	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB009-0612-01	6 - 12	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB009-1218-01	12 - 18	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB009-1824-01	18 - 24	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB009-2430-01	24 - 30	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB009-3036-01	30 - 36	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB009-3642-01	36 - 42	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB009-4248-01	42 - 48	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
3/2/2016	NA	NA	RB-N-160302	NA	DI Water	Rinsate Blank	Isotopic Thorium and Uranium Radium-226 Radium-228	N

Notes:
RST 3 - Removal Support Team 3
No. - Number
Lab QC - Laboratory Quality Control
MS/MSD - Matrix spike/matrix spike duplicate

Table 1
Property N002 Sample Collection Summary Table
Niagara Falls Boulevard Radiological Site
Niagara Falls, Niagara County, New York
March 1 through 3, 2016

Sample Date	Sample Location No.	Location Description	RST 3 Sample No.	Depth Interval (inches)	Sample Matrix	Sample Type	Laboratory Analyses	Lab QC
3/3/2016	N002-SB003	Office-3 West	N002-SB003-0006-01	0 - 6	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB003-0612-01	6 - 12	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB003-1218-01	12 - 18	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB003-1824-01	18 - 24	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB003-2430-01	24 - 30	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB003-3036-01	30 - 36	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB003-3642-01	36 - 42	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB003-4248-01	42 - 48	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
3/3/2016	N002-SB004	Office-3 East	N002-SB004-0006-01	0 - 6	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB004-0612-01	6 - 12	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB004-1218-01	12 - 18	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB004-1824-01	18 - 24	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB004-2430-01	24 - 30	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB004-3036-01	30 - 36	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB004-3642-01	36 - 42	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB004-4248-01	42 - 48	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N

Notes:
RST 3 - Removal Support Team 3
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MS/MSD - Matrix spike/matrix spike duplicate

Table 1
Property N002 Sample Collection Summary Table
Niagara Falls Boulevard Radiological Site
Niagara Falls, Niagara County, New York
March 1 through 3, 2016

Sample Date	Sample Location No.	Location Description	RST 3 Sample No.	Depth Interval (inches)	Sample Matrix	Sample Type	Laboratory Analyses	Lab QC
3/3/2016	N002-SB006	Hallway-1 East	N002-SB006-0006-01	0 - 6	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB006-0612-01	6 - 12	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB006-1218-01	12 - 18	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB006-1824-01	18 - 24	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB006-2430-01	24 - 30	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB006-3036-01	30 - 36	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB006-3642-01	36 - 42	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB006-4248-01	42 - 48	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
3/3/2016	N002-SB007	Storage-2	N002-SB007-0006-01	0 - 6	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB007-0612-01	6 - 12	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB007-1218-01	12 - 18	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB007-1824-01	18 - 24	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB007-2430-01	24 - 30	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB007-3036-01	30 - 36	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB007-3642-01	36 - 42	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
			N002-SB007-4248-01	42 - 48	Soil	Field Sample	Gamma Spec (Modified) Isotopic Thorium Isotopic Uranium	N
3/3/2016	NA	NA	RB-N-160303	NA	DI Water	Rinsate Blank	Isotopic Thorium and Uranium Radium-226 Radium-228	N

Notes:
RST 3 - Removal Support Team 3
No. - Number
Lab QC - Laboratory Quality Control
MS/MSD - Matrix spike/matrix spike duplicate

Table 2
Property N002 Sample Location and Soil Sample Screening Results Summary Table
Niagara Falls Boulevard Radiological Site
Niagara Falls, Niagara County, New York
March 1 through 3, 2016

Sample Location Surface Screening				Subsurface Soil Sample Screening		
Sample Location No.	Thickness of Concrete Slab (inches)	Location Description	Result (cpm)	RST 3 Sample No.	Sample Depth (inches)	Result (cpm)
N002-SB001	4	Wood work area	W = 9,800 C = 10,200	N002-SB001-0006-01	0 - 6	7,990
				N002-SB001-0612-01	6 - 12	7,650
				N002-SB001-1218-01	12 - 18	7,300
				N002-SB001-1824-01	18 - 24	7,600
				N002-SB001-2430-01	24 - 30	7,300
				N002-SB001-3036-01	30 - 36	7,700
				N002-SB001-3642-01	36 - 42	7,500
				N002-SB001-4248-01	42 - 48	7,600
N002-SB002	4	Storage-3	W = 9,200 C = 9,200	N002-SB002-0006-01	0 - 6	7,500
				N002-SB002-0612-01	6 - 12	7,600
				N002-SB002-1218-01	12 - 18	7,500
				N002-SB002-1824-01	18 - 24	8,000
				N002-SB002-2430-01	24 - 30	7,400
				N002-SB002-3036-01	30 - 36	7,400
				N002-SB002-3642-01	36 - 42	7,500
				N002-SB002-4248-01	42 - 48	7,700
N002-SB003	3	Office-3 West	W = 117,000 C = 170,000	N002-SB003-0006-01	0 - 6	77,600
				N002-SB003-0612-01	6 - 12	7,900
				N002-SB003-1218-01	12 - 18	7,400
				N002-SB003-1824-01	18 - 24	7,700
				N002-SB003-2430-01	24 - 30	7,100
				N002-SB003-3036-01	30 - 36	7,400
				N002-SB003-3642-01	36 - 42	7,800
				N002-SB003-4248-01	42 - 48	7,500
N002-SB004	3	Office-3 East	W = 83,600 C = 93,200	N002-SB004-0006-01	0 - 6	57,300
				N002-SB004-0612-01	6 - 12	7,400
				N002-SB004-1218-01	12 - 18	7,300
				N002-SB004-1824-01	18 - 24	7,100
				N002-SB004-2430-01	24 - 30	7,500
				N002-SB004-3036-01	30 - 36	7,400
				N002-SB004-3642-01	36 - 42	7,100
				N002-SB004-4248-01	42 - 48	7,500
N002-SB005	3	Hallway-1 West	W = 121,000 C = 157,000	N002-SB005-0006-01	0 - 6	91,000
				N002-SB005-0612-01	6 - 12	7,200
				N002-SB005-1218-01	12 - 18	7,200
				N002-SB005-1824-01	18 - 24	7,200
				N002-SB005-2430-01	24 - 30	7,400
				N002-SB005-3036-01	30 - 36	7,000
				N002-SB005-3642-01	36 - 42	7,100
				N002-SB005-4248-01	42 - 48	7,700
N002-SB006	3	Hallway-1 East	W = 98,000 C = 116,000	N002-SB006-0006-01	0 - 6	46,300
				N002-SB006-0612-01	6 - 12	7,300
				N002-SB006-1218-01	12 - 18	7,300
				N002-SB006-1824-01	18 - 24	7,500
				N002-SB006-2430-01	24 - 30	8,000
				N002-SB006-3036-01	30 - 36	7,400
				N002-SB006-3642-01	36 - 42	7,700
				N002-SB006-4248-01	42 - 48	7,400
N002-SB007	3	Storage-2	W = 127,000 C = 193,000	N002-SB007-0006-01	0 - 6	105,000
				N002-SB007-0612-01	6 - 12	7,100
				N002-SB007-1218-01	12 - 18	7,500
				N002-SB007-1824-01	18 - 24	7,400
				N002-SB007-2430-01	24 - 30	7,200
				N002-SB007-3036-01	30 - 36	7,300
				N002-SB007-3642-01	36 - 42	7,500
				N002-SB007-4248-01	42 - 48	7,600

Notes:
RST 3 - Removal Support Team 3
No. - Number
W - Waist-Level (Data was collected at approximately 3 feet above the ground)
C - Contact (Data was collected at approximately 1 inch above the ground)
cpm - Counts per minute
Surface background gamma values: W= 9,200 - 9,800 cpm; C= 9,200 - 10,200 cpm
Values in red exceed background gamma values

Table 2
Property N002 Sample Location and Soil Sample Screening Results Summary Table
Niagara Falls Boulevard Radiological Site
Niagara Falls, Niagara County, New York
March 1 through 3, 2016

Sample Location Surface Screening				Subsurface Soil Sample Screening		
Sample Location No.	Thickness of Concrete Slab (inches)	Location Description	Result (cpm)	RST 3 Sample No.	Sample Depth (inches)	Result (cpm)
N002-SB008	5	Storage-4	W = 16,400 C = 16,500	N002-SB008-0006-01	0 - 6	13,300
				N002-SB008-0612-01	6 - 12	8,300
				N002-SB008-1218-01	12 - 18	7,700
				N002-SB008-1824-01	18 - 24	6,900
				N002-SB008-2430-01	24 - 30	7,600
				N002-SB008-3036-01	30 - 36	7,600
				N002-SB008-3642-01	36 - 42	8,000
				N002-SB008-4248-01	42 - 48	7,600
N002-SB009	4	Storage-6	W = 34,200 C = 50,100	N002-SB009-0006-01	0 - 6	15,500
				N002-SB009-0612-01	6 - 12	8,000
				N002-SB009-1218-01	12 - 18	7,400
				N002-SB009-1824-01	18 - 24	7,500
				N002-SB009-2430-01	24 - 30	7,800
				N002-SB009-3036-01	30 - 36	7,800
				N002-SB009-3642-01	36 - 42	7,400
				N002-SB009-4248-01	42 - 48	7,900
N002-SB010	5	Warehouse-2 North	W = 25,700 C = 37,300	N002-SB010-0006-01	0 - 6	14,600
				N002-SB010-0612-01	6 - 12	12,700
				N002-SB010-1218-01	12 - 18	7,100
				N002-SB010-1824-01	18 - 24	7,000
				N002-SB010-2430-01	24 - 30	6,900
				N002-SB010-3036-01	30 - 36	6,900
				N002-SB010-3642-01	36 - 42	7,300
				N002-SB010-4248-01	42 - 48	7,100
N002-SB011	4	Warehouse-3 West	W = 34,100 C = 35,800	N002-SB011-0006-01	0 - 6	14,800
				N002-SB011-0612-01	6 - 12	9,200
				N002-SB011-1218-01	12 - 18	7,700
				N002-SB011-1824-01	18 - 24	7,500
				N002-SB011-2430-01	24 - 30	7,200
				N002-SB011-3036-01	30 - 36	7,300
				N002-SB011-3642-01	36 - 42	7,600
				N002-SB011-4248-01	42 - 48	7,600
N002-SB012	4	Warehouse-3 South	W = 45,500 C = 80,100	N002-SB012-0006-01	0 - 6	7,800
				N002-SB012-0612-01	6 - 12	7,400
				N002-SB012-1218-01	12 - 18	7,800
				N002-SB012-1824-01	18 - 24	7,300
				N002-SB012-2430-01	24 - 30	7,400
				N002-SB012-3036-01	30 - 36	7,400
				N002-SB012-3642-01	36 - 42	7,300
				N002-SB012-4248-01	42 - 48	7,200
N002-SB013	3	Warehouse-3 East	W = 34,300 C = 39,300	N002-SB013-0006-01	0 - 6	7,600
				N002-SB013-0612-01	6 - 12	14,300
				N002-SB013-1218-01	12 - 18	7,900
				N002-SB013-1824-01	18 - 24	7,400
				N002-SB013-2430-01	24 - 30	7,500
				N002-SB013-3036-01	30 - 36	7,500
				N002-SB013-3642-01	36 - 42	7,600
				N002-SB013-4248-01	42 - 48	7,700
N002-SB014	5	Warehouse-2 South	W = 22,800 C = 43,100	N002-SB014-0006-01	0 - 6	9,300
				N002-SB014-0612-01	6 - 12	7,400
				N002-SB014-1218-01	12 - 18	7,400
				N002-SB014-1824-01	18 - 24	7,400
				N002-SB014-2430-01	24 - 30	7,300
				N002-SB014-3036-01	30 - 36	6,900
				N002-SB014-3642-01	36 - 42	7,600
				N002-SB014-4248-01	42 - 48	7,400

Notes:
RST 3 - Removal Support Team 3
No. - Number
W - Waist-Level (Data was collected at approximately 3 feet above the ground)
C - Contact (Data was collected at approximately 1 inch above the ground)
cpm - Counts per minute
Surface background gamma values: W= 9,200 - 9,800 cpm; C= 9,200 - 10,200 cpm
Values in red exceed background gamma values

Table 3
Property N002 Soil Boring Logs Summary Table
Niagara Falls Boulevard Radiological Site
Niagara Falls, Niagara County, New York
March 1 through 3, 2016

Sample Location	Location Description	Soil Recovery (inches)	Depth From (inches)	Depth To (inches)	Soil Description
N002-SB001	Wood work area	45	0	10	Moist light brown silty CLAY, little fine to medium sand.
			10	26	Moist brown silty CLAY, stiff.
			26	27	Moist black organic.
			27	45	Moist dark grey grading to olive grey silty CLAY, medium stiff.
N002-SB002	Storage-3	45	0	3	Moist dark brown fine to coarse SAND, little fine gravel.
			3	10	Moist brown clayey SILT, soft.
			10	25	Moist light brown silty CLAY, medium stiff.
			25	26	Moist black organic, trace angular medium GRAVEL.
			26	45	Moist dark grey grading to olive grey silty CLAY, medium stiff.
N002-SB003	Office-3 West	46	0	1	Moist dark brown pea size gravel.
			1	2	Asphalt.
			2	7	Black angular GRAVEL (slag).
			7	22	Moist light brown silty CLAY, medium stiff.
			22	46	Moist dark grey grading to olive grey silty CLAY, medium stiff.
N002-SB004	Office-3 East	41	0	1	Moist dark grey pea-size GRAVEL.
			1	3	Ashalt.
			3	8	Moist dark grey angular GRAVEL (slag).
			8	18	Moist light brown silty CLAY, medium stiff.
			18	41	Moist dark grey grading to olive grey silty CLAY, medium stiff.
N002-SB005	Hallway-1 West	38	0	3	Blacktop mixed with slag.
			3	8	Slag material (based on observation from core hole).
			8	16	Moist light brown silty CLAY, medium stiff.
			16	17	Moist black organic.
			17	38	Moist dark grey grading to olive grey silty CLAY, medium stiff.
N002-SB006	Hallway-1 East	48	0	1	Moist dark grey pea-size GRAVEL.
			1	3	Asphalt.
			3	9	Moist dark grey angular GRAVEL (slag).
			9	28	Moist light brown silty CLAY, medium stiff.
			28	48	Moist dark grey grading to olive grey silty CLAY, medium stiff.
N002-SB007	Storage-2	46	0	1	Moist dark grey pea-size GRAVEL.
			1	3	Asphalt.
			3	9	Dark grey angular GRAVEL (slag).
			9	24	Moist light brown silty CLAY, medium stiff.
			24	25	Moist black organic.
			25	46	Moist dark grey grading to olive grey silty CLAY, medium stiff.
N002-SB008	Storage-4	36	0	9	Moist brown silty fine to coarse SAND with sub-angular gravel.
			9	18	Moist light brown silty CLAY, medium stiff.
			18	19	Moist black organic.
			19	36	Moist dark grey grading to olive grey silty CLAY, medium stiff.
N002-SB009	Storage-6	38	0	4	Moist dark brown to black angular medium GRAVEL, little ash like material.
			4	9	Moist dark brown silty fine to coarse SAND, little fine gravel.
			9	11	Moist dark gray poreforific rock fragments.
			11	20	Moist light brown silty CLAY, medium stiff.
			20	21	Moist black organic material.
			21	38	Moist dark grey grading to olive grey silty CLAY, medium stiff.
N002-SB010	Warehouse-2 North	39	0	4	Moist light grey angular GRAVEL.
			4	6	Moist dark brown fine to coarse SAND, some fine to coarse gravel.
			6	8	Moist dark grey medium to large GRAVEL (slag).
			8	17	Moist light brown silty CLAY, medium stiff.
			17	18	Moist dark grey fine to medium angular GRAVEL.
			18	23	Moist light brown silty CLAY, medium stiff.
			23	24	Moist black organic, strong hydrocarbon odor.
			24	39	Moist olive grey silty CLAY, medium stiff.
N002-SB011	Warehouse-3 West	36	0	10	Moist light grey angular GRAVEL, grading to dark brown fine to medium gravel and fine to coarse sand.
			10	20	Moist light brown silty CLAY, medium stiff.
			20	36	Moist olive grey silty CLAY, medium stiff.

Table 3
Property N002 Soil Boring Logs Summary Table
Niagara Falls Boulevard Radiological Site
Niagara Falls, Niagara County, New York
March 1 through 3, 2016

Sample Location	Location Description	Soil Recovery (inches)	Depth From (inches)	Depth To (inches)	Soil Description
N002-SB012	Warehouse-3 South	42	0	2	Moist dark brown fine to coarse SAND, some fine to coarse gravel.
			2	7	Moist olive grey silty CLAY, medium stiff.
			7	8	Moist dark grey angular GRAVEL (slag material).
			8	10	Moist olive grey silty CLAY, medium stiff.
			10	11	Moist black organic material, strong hydrocarbon odor.
			11	24	Moist olive grey silty CLAY, medium stiff.
			24	42	Moist olive grey silty CLAY, medium stiff, strong hydrocarbon odor.
N002-SB013	Warehouse-3 East	36	0	7	Wet light grey fine to medium GRAVEL, sub-angular.
			7	13	Moist brown fine to coarse SAND, some fine to medium gravel.
			13	22	Moist brown silty CLAY, medium stiff.
			22	23	Moist black organic, hydrocarbon odor.
			23	32	Moist olive grey silty CLAY, medium stiff.
			32	36	Moist light grey silty CLAY, medium stiff.
N002-SB014	Warehouse-2 South	31	0	5	Moist dark brown silty fine SAND, some fine to medium rounded gravel, trace light grey fine sand in pebble form, very brittle.
			5	9	Moist light brown silty CLAY, medium stiff.
			9	14	Moist dark brown to black medium to coarse SAND, little fine gravel, appears to be an ash like material, trace poreforific texture olive green in color.
			14	31	Moist dark brown grading to olive grey silty CLAY, medium stiff.

Table 4: Validated Soil Analytical Results Summary Table - Radioisotopes
Niagara Falls Boulevard Radiological Site
Niagara Falls Boulevard, Niagara Falls, New York
March 2016

	Location No.	N002-SB001			N002-SB001			N002-SB001			N002-SB001			N002-SB001			N002-SB001			N002-SB001		
	RST 3 Sample No.	**N002-SB001-0006-01**			**N002-SB001-0612-01**			**N002-SB001-1218-01**			**N002-SB001-1824-01**			**N002-SB001-2430-01**			**N002-SB001-3036-01**			**N002-SB001-3642-01**		
	Sample Depth (inches)	0-6			6-12			12-18			18-24			24-30			30-36			36-42		
	Sample Matrix	Soil			Soil			Soil			Soil			Soil			Soil			Soil		
	Sample Date	3/2/2016			3/2/2016			3/2/2016			3/2/2016			3/2/2016			3/2/2016			3/2/2016		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**																					
Actinium-228 (Ac-228)	126,000		U			U			U			U			U			U			U	
Bismuth-212 (Bi-212)	6,330,000	0.09	U	2.1	0.19	U	2.91	2.05		2.00	2.26	J	2.58	2.29		1.7	1.2	U	2.58	1.91		1.14
Bismuth-214 (Bi-214)	1,290,000		U			U			U			U			U			U			U	
Cesium-137 (Cs-137)	11	0	U	0.05	0	U	0.16	0	U	0.03	0	U	0.03	0	U	0.07	0	U	0.04	0	U	0.02
Lead-210 (Pb-210)	418	2.36	U	17.12	0.88	U	3.86	-9.97	U	23.93	3	U	4.17	-2.98	U	27.47	2.48	J	3.58	6.99	U	17.82
Lead-212 (Pb-212)	661,000	1.01		0.25	1.41		0.32	1.39		0.3	1.7		0.37	1.36		0.32	1.7		0.37	1.3		0.29
Lead-214 (Pb-214)	7,200,000		U			U			U			U			U			U			U	
Potassium-40 (K-40)	25.9	18.2		3.44	27.55		5.23	26.35		4.75	29.93		5.72	24.48		4.54	18.2		4.13	21.10		3.93
Radium-226* (Ra-226)	2.48	1.03		0.28	1.41		0.31	1.4		0.28	1.49		0.34	1.45		0.37	1.7		0.43	1.34		0.35
Radium-228 (Ra-228)	15.9	1.67		0.44	1.57		0.44	1.73		0.49	2.3		0.64	1.74		0.5	1.68		0.55	1.13		0.48
Thallium-208 (Tl-208)	2,430,000	0.52		0.14	0.41		0.15	0.38		0.15	0.41		0.18	0.44		0.16	0.36		0.22	0.41		0.15
Thorium-228 (Th-228)	14,100	1.08	J	0.45	1.07	J	0.46	0.9	J	0.45	1.14	J	0.58	1.54	J	0.52	1.16	J	0.43	1.09	J	0.41
Thorium-230 (Th-230)	2,090	0.83	J	0.36	0.64	J	0.33	1.21	J	0.5	0.96	J	0.49	0.97	J	0.38	1.03	J	0.38	1.2	J	0.43
Thorium-232 Th-232)	2,020	0.61	J	0.3	1.01	J	0.42	1.25	J	0.51	1.03	J	0.5	1.07	J	0.4	0.94	J	0.36	1.38	U	0.46
Thorium-234 Th-234)	47,900	2.34	U	2.85	2.47	J	2.22	0	U	2.85	1.39	U	1.96	1.94	U	2.67	2.5	J	1.9	1.84		4.21
Uranium-233/234 (U-233/234)	3,330	1.12		0.3	0.71		0.22	0.95		0.27	0.84		0.24	0.89		0.27	1.03		0.29	0.73		0.23
Uranium-235/236 (U-235/236)	39.2	0.13		0.1	0.09	J	0.08	0.03	J	0.07	0.02	UJ	0.06	0.16		0.11	0.11	J	0.09	0.02	UJ	0.07
Uranium-235 (U-235)	39.2	0.2	R	0.14	0.36	R	0.16	0.01	R	0.19	0.27	R	0.3	0.27	R	0.25	0.09	R	0.19	0.2	R	0.15
Uranium-238 (U-238)	3,720	1.02		0.28	0.9		0.26	0.84		0.25	0.9		0.25	1.42		0.36	0.91		0.26	1.13		0.3

	Location No.	N002-SB001			N002-SB002			N002-SB002			N002-SB002			N002-SB002			N002-SB002			N002-SB002		
	RST 3 Sample No.	**N002-SB001-4248-01**			**N002-SB002-0006-01**			**N002-SB002-0612-01**			**N002-SB002-0612-02**			**N002-SB002-1218-01**			**N002-SB002-1824-01**			**N002-SB002-1824-02**		
	Sample Depth (inches)	42-48			0-6			6-12			6-12			12-18			18-24			18-24		
	Sample Matrix	Soil			Soil			Soil			Soil			Soil			Soil			Soil		
	Sample Date	3/2/2016			3/2/2016			3/2/2016			3/2/2016			3/2/2016			3/2/2016			3/2/2016		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**																					
Actinium-228 (Ac-228)	126,000		U			U			U			U			U			U			U	
Bismuth-212 (Bi-212)	6,330,000	1.57	U	1.54	0.03	U	2.08	3.47		1.74	2.14		1.53	2.07		1.61	1.94	J	1.48	1.86		1.73
Bismuth-214 (Bi-214)	1,290,000		U			U			U			U			U			U			U	
Cesium-137 (Cs-137)	11	0	U	0.03	0.03	U	0.12	0.02	U	0.14	0.01	U	0.12	0.00	U	0.11	0.00	U	0.05	0.01	U	0.14
Lead-210 (Pb-210)	418	2.64	J	3.66	4.59	U	16.49	0.61	U	3.4	-2.22	U	20.48	6.57		3.3	-1.2	U	21.69	-2.82	U	19.09
Lead-212 (Pb-212)	661,000	1.41		0.31	1.16		0.26	1.43		0.3	1.18		0.27	1.43		0.31	1.38		0.31	1.36		0.3
Lead-214 (Pb-214)	7,200,000		U			U			U			U			U			U			U	
Potassium-40 (K-40)	25.9	22.53		4.49	19.80		3.41	24.03		4.61	23.71		4.21	24.81		4.85	23.19		4.75	27.4		4.52
Radium-226* (Ra-226)	2.48	1.46		0.37	1.18		0.27	1.76		0.4	1.25		0.29	1.35		0.36	1.39		0.29	1.52		0.33
Radium-228 (Ra-228)	15.9	1.5		0.53	0.85		0.33	1.46		0.47	1.48		0.41	1.41		0.57	1.95		0.48	1.46		0.5
Thallium-208 (Tl-208)	2,430,000	0.67		0.18	0.31		0.1	0.67		0.2	0.47		0.17	0.62		0.2	0.49		0.17	0.4		0.13
Thorium-228 (Th-228)	14,100	1.29	J	0.48	1.05	J	0.39	0.91	J	0.43	1.12	J	0.45	1.3	J	0.55	0.91	J	0.52	1.11	J	0.6
Thorium-230 (Th-230)	2,090	0.89	J	0.36	0.6	J	0.28	0.71	J	0.37	1.01	J	0.4	0.86	J	0.42	0.38	J	0.3	1.08	J	0.54
Thorium-232 Th-232)	2,020	1.06	J	0.4	0.77	J	0.31	1.02	J	0.44	0.87	J	0.37	0.95	J	0.44	0.62	J	0.38	0.92	J	0.49
Thorium-234 Th-234)	47,900	1.62	J	1.86	1.13	U	1.25	1.32	U	1.66	2.57	U	2.97	2.97	J	2.09	0.84	U	1.66	2.99	J	3.88
Uranium-233/234 (U-233/234)	3,330	0.82		0.24	0.98		0.3	1.04		0.29	1.05		0.29	1.21		0.33	1.1		0.31	1.06		0.30
Uranium-235/236 (U-235/236)	39.2	0.05	J	0.06	0.04	J	0.08	0.05	J	0.07	0.08	J	0.08	0.00	UJ	0.07	0.09	J	0.09	0.06	J	0.07
Uranium-235 (U-235)	39.2	0.15	R	0.1	0.18	R	0.14	0.13	R	0.15	0.22	R	0.16	0.13	R	0.13	0.22	R	0.16	0.31	R	0.18
Uranium-238 (U-238)	3,720	1.19		0.3	1.11		0.33	0.98		0.27	1.25		0.33	0.98		0.28	0.85		0.26	1.08		0.3

Notes:

RST 3 - Removal Support Team 3.

No. - Number; U - Not detected; J - An estimated result; R - A rejected result.

UJ - The analyte was not detected, but the required Minimum Detectable Activity (MDA) was not attained. A number of specific problems also resulted in assignment of a J qualifier where results were more uncertain than usual.

[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Level (SSAL) values are presented in picocuries per gram (pCi/g).

Values in red equal or exceed the EPA SSAL for the respective radioisotope.

- Radium-226* (21-day ingrowth) analyzed by gamma spectroscopy via EPA 901.1 modified (soil only).
- Depending on the analytical method used, if the detection limit of the laboratory instrument is not low enough a negative result is generated if the sample contains low or no detection of the target radionuclide.

Background sample location.

Table 4: Validated Soil Analytical Results Summary Table - Radioisotopes
Niagara Falls Boulevard Radiological Site
Niagara Falls Boulevard, Niagara Falls, New York
March 2016

	Location No.	N002-SB002			N002-SB002			N002-SB002			N002-SB002			N002-SB002			N002-SB003			N002-SB003		
	RST 3 Sample No.	**N002-SB002-2430-01**			**N002-SB002-3036-01**			**N002-SB002-3036-02**			**N002-SB002-3642-01**			**N002-SB002-4248-01**			**N002-SB003-0006-1**			**N002-SB003-0612-01**		
	Sample Depth (inches)	24-30			30-36			30-36			36-42			42-48			0-6			6-12		
	Sample Matrix	Soil			Soil			Soil			Soil			Soil			Soil			Soil		
	Sample Date	3/2/2016			3/2/2016			3/2/2016			3/2/2016			3/2/2016			3/3/2016			3/3/2016		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**																					
Actinium-228 (Ac-228)	126,000		U			U			U			U			U			U			U	
Bismuth-212 (Bi-212)	6,330,000	3.23		1.96	2.07	J	1.68	0.92	U	2.61	2.39		1.40	0.81	U	2.3	126.93		18.55	9.32		2.61
Bismuth-214 (Bi-214)	1,290,000		U			U			U			U			U			U			U	
Cesium-137 (Cs-137)	11	0.02	U	0.16	0	U	0.06	0.01	U	0.12	0	U	0.05	0	U	0.03	-0.33	U	0.67	0.14	J	0.19
Lead-210 (Pb-210)	418	1.19	U	3.47	-6.7	U	22.65	0.93	U	3.90	0.41	U	21.57	1.46	U	3.66	0	U	56.2	9	U	32.94
Lead-212 (Pb-212)	661,000	1.20		0.3	1.45		0.31	1.11		0.28	1.21		0.27	1.38		0.31	121.34		16.4	8.66		1.28
Lead-214 (Pb-214)	7,200,000		U			U			U			U			U			U			U	
Potassium-40 (K-40)	25.9	23.43		4.7	20.12		3.78	22.85		4.65	20.46		3.73	20.90		4.21	7.28		5.67	21.21		3.92
Radium-226* (Ra-226)	2.48	1.63		0.38	1.49		0.39	1.82		0.44	1.34		0.31	1.64		0.39	41.20		5.56	2.76		0.53
Radium-228 (Ra-228)	15.9	1.39		0.38	1.31		0.55	1.58		0.49	1.43		0.41	1.65		0.55	123.78		16.77	8.65		1.44
Thallium-208 (Tl-208)	2,430,000	0.46		0.16	0.53		0.16	0.47		0.16	0.46		0.13	0.47		0.18	40.66		5.51	3.17		0.51
Thorium-228 (Th-228)	14,100	1.29	J	0.46	1.61	J	0.53	1.84		0.59	1.08		0.43	1.46		0.48	68.6	J	11.8	7.9	J	2.45
Thorium-230 (Th-230)	2,090	0.94	J	0.38	1.20	J	0.42	0.91		0.38	1.18		0.45	0.93		0.36	23.6	J	4.57	3.18	J	1.38
Thorium-232 Th-232)	2,020	1.12	J	0.41	1.04	J	0.38	1.05		0.41	0.82		0.36	1.18		0.41	68.6	J	11.8	6.75	J	2.15
Thorium-234 Th-234)	47,900	3.65		2	0	U	2.55	1.12	U	1.8	1.95	U	2.61	0.05	U	2.55	38.02		12.73	6.25	J	7.22
Uranium-233/234 (U-233/234)	3,330	1.08		0.29	1.49		0.37	1.42		0.39	1.33		0.35	1.23		0.33	34.4		5.92	2.97		0.61
Uranium-235/236 (U-235/236)	39.2	0.04	J	0.06	0.05	J	0.07	0.16		0.12	0	UJ	0.07	0.04	J	0.07	2.07		0.6	0.14	J	0.1
Uranium-235 (U-235)	39.2	0.22	R	0.16	0.29	R	0.15	0.34	R	0.18	0.20	R	0.12	0.11	R	0.16	5.04	R	1.08	0.65	R	0.24
Uranium-238 (U-238)	3,720	0.92		0.26	1.09		0.3	1.1		0.33	1.22		0.33	1.13		0.31	37.5		6.44	2.97		0.61

	Location No.	N002-SB003			N002-SB003			N002-SB003			N002-SB003			N002-SB003			N002-SB003			N002-SB004		
	RST 3 Sample No.	**N002-SB003-1218-01**			**N002-SB003-1824-01**			**N002-SB003-2430-01**			**N002-SB003-3036-01**			**N002-SB003-3642-01**			**N002-SB003-4248-01**			**N002-SB004-0006-01**		
	Sample Depth (inches)	12-18			18-24			24-30			30-36			36-42			42-48			0-6		
	Sample Matrix	Soil			Soil			Soil			Soil			Soil			Soil			Soil		
	Sample Date	3/3/2016			3/3/2016			3/3/2016			3/3/2016			3/3/2016			3/3/2016			3/3/2016		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**																					
Actinium-228 (Ac-228)	126,000		U			U			U			U			U			U			U	
Bismuth-212 (Bi-212)	6,330,000	4		2.95	1.96	J	2.4	1.08	U	1.21	-0.03	U	2.96	1.68		0.99	1.61		1.05	100.35		16.79
Bismuth-214 (Bi-214)	1,290,000		U			U			U			U			U			U			U	
Cesium-137 (Cs-137)	11	0.07	U	0.19	0	U	0.02	0	U	0.08	0.01	U	0.17	0	U	0.02	0		0.01	0.14	U	0.61
Lead-210 (Pb-210)	418	0	U	1.5	2.1	U	19.21	3	U	4.8	-6.07	U	24.88	1.66	U	3.69	6.87		16.52	25.44		12.62
Lead-212 (Pb-212)	661,000	2.19		0.43	1.66		0.39	1.42		0.36	1.03		0.27	1.35		0.32	1.06		0.25	83.33		11.32
Lead-214 (Pb-214)	7,200,000		U			U			U			U			U			U			U	
Potassium-40 (K-40)	25.9	26.42		5.15	27.65		4.84	24.16		5.06	20.84		4.16	21.83		4.4	20.64		3.54	1.92	U	5.74
Radium-226* (Ra-226)	2.48	1.75		0.42	1.16		0.3	1.38		0.4	1.22		0.33	1.47		0.38	1.3		0.3	36.74		5.02
Radium-228 (Ra-228)	15.9	2.6		0.57	1.93		0.49	1.7		0.65	1.03		0.56	0.82	J	0.63	1.57		0.37	85.23		11.54
Thallium-208 (Tl-208)	2,430,000	0.76		0.23	0.62		0.2	0.41		0.18	0.47		0.1	0.46		0.16	0.54		0.16	28.39		3.9
Thorium-228 (Th-228)	14,100	2.55	J	0.88	1.16	J	0.56	1.06		0.41	1.37		0.44	1.64		0.61	1.50		0.57	41.1	J	7.35
Thorium-230 (Th-230)	2,090	1.43	J	0.6	0.84	J	0.45	1.02		0.38	0.85		0.32	0.87		0.41	1.21		0.48	16	J	3.29
Thorium-232 Th-232)	2,020	1.84	U	0.69	1.84	J	0.68	1.05		0.38	0.9		0.33	1.19		0.49	0.71		0.36	38.9	J	6.98
Thorium-234 Th-234)	47,900	1.53		1.64	1.06	U	3.97	3.74		2.26	0		1.75	1.96	J	2.23	0.68	U	4.14	27.68		8.29
Uranium-233/234 (U-233/234)	3,330	1.21		0.32	1.15		0.31	0.98		0.29	0.88		0.27	1.13		0.3	0.92		0.27	21.3		3.6
Uranium-235/236 (U-235/236)	39.2	0.15		0.1	0.05	J	0.07	0.04	J	0.07	0.04	J	0.07	0.05	J	0.07	0.03	UJ	0.07	1.45		0.43
Uranium-235 (U-235)	39.2	0.25	R	0.28	0.12	R	0.17	0.33	R	0.17	0.26	R	0.15	0.21	R	0.12	0.1	R	0.15	4.99	R	1.04
Uranium-238 (U-238)	3,720	1.21		0.32	0.84		0.26	1.29		0.34	0.91		0.27	0.95		0.27	0.71		0.23	22		3.71

Notes:

RST 3 - Removal Support Team 3.

No. - Number; U - Not detected; J - An estimated result; R - A rejected result.

UJ - The analyte was not detected, but the required Minimum Detectable Activity (MDA) was not attained. A number of specific problems also resulted in assignment of a J qualifier where results were more uncertain than usual.

[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Level (SSAL) values are presented in picocuries per gram (pCi/g).

Values in red equal or exceed the EPA SSAL for the respective radioisotope.

- Radium-226* (21-day ingrowth) analyzed by gamma spectroscopy via EPA 901.1 modified (soil only).
- Depending on the analytical method used, if the detection limit of the laboratory instrument is not low enough a negative result is generated if the sample contains low or no detection of the target radionuclide.

Table 4: Validated Soil Analytical Results Summary Table - Radioisotopes
Niagara Falls Boulevard Radiological Site
Niagara Falls Boulevard, Niagara Falls, New York
March 2016

	Location No.	N002-SB004			N002-SB004			N002-SB004			N002-SB004			N002-SB004			N002-SB004			N002-SB004		
	RST 3 Sample No.	**N002-SB004-0612-01**			**N002-SB004-1218-01**			**N002-SB004-1824-01**			**N002-SB004-2430-01**			**N002-SB004-3036-01**			**N002-SB004-3642-01**			**N002-SB004-4248-01**		
	Sample Depth (inches)	6-12			12-18			18-24			24-30			30-36			36-42			42-48		
	Sample Matrix	Soil			Soil			Soil			Soil			Soil			Soil			Soil		
	Sample Date	3/3/2016			3/3/2016			3/3/2016			3/3/2016			3/3/2016			3/3/2016			3/3/2016		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**																					
Actinium-228 (Ac-228)	126,000		U			U			U			U			U			U			U	
Bismuth-212 (Bi-212)	6,330,000	2.12		1.58	1.03	J	1.71	1.33	J	2.33	2.2		1.49	2.21		1.58	2.44		1.45	0	U	1.61
Bismuth-214 (Bi-214)	1,290,000		U			U			U			U			U			U			U	
Cesium-137 (Cs-137)	11	0.06	U	0.14	0	U	0.02	0	U	0.08	0.01	U	0.14	0	U	0.02	0	U	0.12	0.03	U	0.14
Lead-210 (Pb-210)	418	1.05	U	3.83	0.65	U	21.09	3.4	J	2.68	6.68	U	21.69	1.16	U	3.62	-4.39	U	21.13	2.24	U	3.83
Lead-212 (Pb-212)	661,000	1.94		0.39	1.37		0.31	1.26		0.3	1.18		0.28	1.37		0.31	1.15		0.26	1.24		0.29
Lead-214 (Pb-214)	7,200,000		U			U			U			U			U			U			U	
Potassium-40 (K-40)	25.9	22.24		4.44	22.26		4.5	19.47		4.15	20.95		4.21	21.86		4.37	23.8		4	21.03		4.35
Radium-226* (Ra-226)	2.48	1.31		0.34	1.4		0.34	1.5		0.29	1.26		0.34	1.28		0.36	1.47		0.35	1.37		0.32
Radium-228 (Ra-228)	15.9	1.98		0.58	1.69		0.48	1.22		0.58	1.95		0.49	1.62		0.43	1.18		0.36	1.78		0.6
Thallium-208 (Tl-208)	2,430,000	0.68		0.2	0.47		0.15	0.51		0.16	0.54		0.15	0.38		0.25	0.49		0.14	0.53		0.18
Thorium-228 (Th-228)	14,100	1.51	J	0.84	1.55	J	0.69	0.84		0.36	1.18		0.39	1.07		0.43	1.17		0.42	0.87		0.29
Thorium-230 (Th-230)	2,090	0.85	J	0.57	0.93	J	0.51	0.78		0.32	0.73		0.29	1.01		0.41	1.11		0.39	0.84		0.28
Thorium-232 Th-232)	2,020	1.52	J	0.78	0.97	J	0.51	0.92		0.35	0.92		0.32	0.84		0.37	0.95		0.36	0.86		0.28
Thorium-234 Th-234)	47,900	1.69	J	2.53	1.16	U	4.38	1.69	J	2.35	2.3	U	2.57	0.72	U	2.31	1.86	U	2.89	0.11	U	2.89
Uranium-233/234 (U-233/234)	3,330	0.87		0.26	0.8		0.24	0.92		0.25	1.1		0.33	0.88		0.26	1.15		0.32	0.55		0.2
Uranium-235/236 (U-235/236)	39.2	0.14	J	0.1	0.09	J	0.08	0.1	J	0.08	0.09	J	0.1	0.12	J	0.1	0.13	J	0.1	0.07		0.07
Uranium-235 (U-235)	39.2	0.32	R	0.27	0.09	R	0.14	0.14	R	0.12	0.2	R	0.17	0.23	R	0.23	0.12	R	0.17	0.23	R	0.16
Uranium-238 (U-238)	3,720	1.06		0.29	0.98		0.28	1		0.27	1.45		0.39	0.93		0.26	1.15		0.32	0.87		0.26

	Location No.	N002-SB005			N002-SB005			N002-SB005			N002-SB005			N002-SB005			N002-SB005			N002-SB005		
	RST 3 Sample No.	**N002-SB005-0006-01**			**N002-SB005-0612-01**			**N002-SB005-1218-01**			**N002-SB005-1824-01**			**N002-SB005-2430-01**			**N002-SB005-3036-01**			**N002-SB005-3642-01**		
	Sample Depth (inches)	0-6			6-12			12-18			18-24			24-30			30-36			36-42		
	Sample Matrix	Soil			Soil			Soil			Soil			Soil			Soil			Soil		
	Sample Date	3/2/2016			3/2/2016			3/2/2016			3/2/2016			3/2/2016			3/2/2016			3/2/2016		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**																					
Actinium-228 (Ac-228)	126,000		U			U			U			U			U			U			U	
Bismuth-212 (Bi-212)	6,330,000	474.08		64.62	6.41		1.92	3.9		1.57	1.62	J	1.31	3.28		1.79	0	U	1.23	2.61		1.54
Bismuth-214 (Bi-214)	1,290,000		U			U			U			U			U			U			U	
Cesium-137 (Cs-137)	11	0	U	0.27	0	U	0.04	0	U	0.02	0.01	U	0.17	0.04	U	0.17	0	U	0.02	0	U	0.01
Lead-210 (Pb-210)	418	118.93	J	105.75	3.7	J	3.96	-11.39	U	24.64	0.55	U	3.76	-2.98	U	25.81	2.05	J	2.98	2.46	U	17.13
Lead-212 (Pb-212)	661,000	427.88		63.18	4.53		0.74	1.9		0.37	1.92		0.37	1.1		0.28	1.21		0.27	0.95		0.24
Lead-214 (Pb-214)	7,200,000		U			U			U			U			U			U			U	
Potassium-40 (K-40)	25.9	4.74	J	3.83	26.79		4.98	28.73		4.82	24.54		4.67	17.37		3.53	20.81		4.17	20.93		3.8
Radium-226* (Ra-226)	2.48	125.6		17.18	2.33		0.49	1.79		0.4	1.66		0.36	1.33		0.32	1.42		0.32	1.38		0.33
Radium-228 (Ra-228)	15.9	437.80		58.2	4.33		0.82	2.37		0.52	2.08		0.55	1.66		0.5	1.69		0.5	0.93		0.38
Thallium-208 (Tl-208)	2,430,000	143.42		19.62	1.68		0.34	0.92		0.22	0.76		0.23	0.5		0.14	0.35	J	0.13	0.35	J	0.12
Thorium-228 (Th-228)	14,100	114	J	19.5	3.64		0.84	1.75		0.53	1.69		0.51	1.66		0.47	1.67		0.45	0.85		0.32
Thorium-230 (Th-230)	2,090	34.2	J	6.76	1.89		0.52	1.3		0.43	1.01		0.37	1.37		0.4	1.05		0.33	1		0.35
Thorium-232 Th-232)	2,020	103	J	17.7	2.77		0.68	1.24		0.42	1.28		0.42	1.52		0.43	1.08		0.33	0.95		0.34
Thorium-234 Th-234)	47,900	117.74		18.97	3.64		2.61	1.86	U	1.72	2.33	J	1.71	0	U	3.06	1.79	J	1.69	0	U	1.85
Uranium-233/234 (U-233/234)	3,330	137	J	28.3	1.86		0.42	1.17		0.33	0.99		0.28	1.15		0.3	0.81		0.23	0.71		0.23
Uranium-235/236 (U-235/236)	39.2	7.01	J	2.02	0.02	U	0.06	0.04	J	0.08	0.07	J	0.07	0.14		0.1	0.03	J	0.06	0.08		0.08
Uranium-235 (U-235)	39.2	15.25	R	2.42	0.27	R	0.16	0.07	R	0.16	0.2	R	0.17	0.18	R	0.19	0.19	R	0.14	0.06	R	0.16
Uranium-238 (U-238)	3,720	140	J	29	2.21		0.48	1.26		0.34	1.11		0.3	1.27		0.32	0.97		0.26	0.99		0.28

Notes:

RST 3 - Removal Support Team 3.

No. - Number; U - Not detected; J - An estimated result; R - A rejected result.

UJ - The analyte was not detected, but the required Minimum Detectable Activity (MDA) was not attained. A number of specific problems also resulted in assignment of a J qualifier where results were more uncertain than usual.

[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Level (SSAL) values are presented in picocuries per gram (pCi/g).

Values in red equal or exceed the EPA SSAL for the respective radioisotope.

- Radium-226* (21-day ingrowth) analyzed by gamma spectroscopy via EPA 901.1 modified (soil only).
- Depending on the analytical method used, if the detection limit of the laboratory instrument is not low enough a negative result is generated if the sample contains low or no detection of the target radionuclide.

Table 4: Validated Soil Analytical Results Summary Table - Radioisotopes
Niagara Falls Boulevard Radiological Site
Niagara Falls Boulevard, Niagara Falls, New York
March 2016

	Location No.	N002-SB005			N002-SB006			N002-SB006			N002-SB006			N002-SB006			N002-SB006			N002-SB006		
	RST 3 Sample No.	**N002-SB005-4248-01**			**N002-SB006-0006-01**			**N002-SB006-0612-01**			**N002-SB006-1218-01**			**N002-SB006-1824-01**			**N002-SB006-2430-01**			**N002-SB006-3036-01**		
	Sample Depth (inches)	42-48			0-6			6-12			12-18			18-24			24-30			30-36		
	Sample Matrix	Soil			Soil			Soil			Soil			Soil			Soil			Soil		
	Sample Date	3/2/2016			3/3/2016			3/3/2016			3/3/2016			3/3/2016			3/3/2016			3/3/2016		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**																					
Actinium-228 (Ac-228)	126,000		U			U			U			U			U			U			U	
Bismuth-212 (Bi-212)	6,330,000	2.67		1.71	161.77		23.05	0.72	U	0.55	0.52	U	3.03	1.79	J	1.93	1.34	J	1.67	1.34	J	2.58
Bismuth-214 (Bi-214)	1,290,000		U			U			U			U			U			U			U	
Cesium-137 (Cs-137)	11	0	U	0.02	-0.26	U	0.73	0.06	J	0.09	0.06	U	0.16	0	U	0.06	0.07	U	0.16	0.02	U	0.13
Lead-210 (Pb-210)	418	0.81	U	2.87	77.88	J	125.52	6.46	U	14.86	4.27		3.26	2.84	U	20.09	2.4	U	4.33	6.86	U	21.82
Lead-212 (Pb-212)	661,000	1.29		0.3	149.22		20.13	0.76		0.21	1.1		0.31	1.3		0.31	1.5		0.34	1.26		0.29
Lead-214 (Pb-214)	7,200,000		U			U			U			U			U			U			U	
Potassium-40 (K-40)	25.9	20.98		4.2	8.05		6.03	10.45		2.39	29.62		5.69	31.54		5.37	27.24		5.38	21.65		4.06
Radium-226* (Ra-226)	2.48	1.26		0.37	39.14		5.36	1.17		0.24	1.7		0.42	1.32		0.36	1.86		0.44	1.24		0.33
Radium-228 (Ra-228)	15.9	1.45		0.44	150.13		20.04	1.11		0.32	1.89		0.58	1.35		0.54	1.02		0.45	1.42		0.47
Thallium-208 (Tl-208)	2,430,000	0.42		0.15	50.04		6.72	0.28	J	0.1	0.58		0.22	0.58		0.16	0.64		0.18	0.32	J	0.13
Thorium-228 (Th-228)	14,100	1.15		0.36	59.1	J	9.62	1.5		0.53	1.27		0.42	1.27		0.46	1.02		0.35	1.07		0.35
Thorium-230 (Th-230)	2,090	0.87		0.29	20.1	J	3.43	0.73		0.34	1.63		0.48	1		0.38	0.99		0.34	0.78		0.28
Thorium-232 Th-232)	2,020	0.96		0.31	59.9	J	9.75	0.87		0.38	0.9		0.33	1.13		0.4	1.12		0.36	0.92		0.3
Thorium-234 Th-234)	47,900	2.33		1.51	62.78		16.09	2.94	J	2.73	5.35		2.11	0.64	U	4.9	2.16	J	2.52	1.24	U	2.08
Uranium-233/234 (U-233/234)	3,330	0.78		0.23	31.5		5.48	0.96		0.28	1.46		0.37	0.96		0.26	1.03		0.29	0.93		0.27
Uranium-235/236 (U-235/236)	39.2	0.01	U	0.06	1.76		0.54	0.06		0.07	0.05	J	0.07	0.06	J	0.07	0	U	0.07	0.03	J	0.07
Uranium-235 (U-235)	39.2	0.22	R	0.15	6.73	R	1.33	0.25	R	0.14	0.31	R	0.14	0.12	R	0.18	0.27	R	0.21	0.15	R	0.17
Uranium-238 (U-238)	3,720	0.84		0.24	32.4		5.63	0.88		0.26	1.57		0.39	0.99		0.27	1.12		0.3	0.91		0.26

	Location No.	N002-SB006			N002-SB006			N002-SB007			N002-SB007			N002-SB007			N002-SB007			N002-SB007		
	RST 3 Sample No.	**N002-SB006-3642-01**			**N002-SB006-4248-01**			**N002-SB007-0006-01**			**N002-SB007-0612-01**			**N002-SB007-1218-01**			**N002-SB007-1824-01**			**N002-SB007-2430-01**		
	Sample Depth (inches)	36-42			42-48			0-6			6-12			12-18			18-24			24-30		
	Sample Matrix	Soil			Soil			Soil			Soil			Soil			Soil			Soil		
	Sample Date	3/3/2016			3/3/2016			3/3/2016			3/3/2016			3/3/2016			3/3/2016			3/3/2016		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**																					
Actinium-228 (Ac-228)	126,000		U			U			U			U			U			U			U	
Bismuth-212 (Bi-212)	6,330,000	1.32	U	1.76	0.98	J	1.62	280.64		31.99	14.42		4.38	1.17	U	2.45	4.08		1.63	1.46	J	1.78
Bismuth-214 (Bi-214)	1,290,000		U			U			U			U			U			U			U	
Cesium-137 (Cs-137)	11	0.03	U	0.08	0	U	0.01	0	U	0.28	0.1	U	0.24	0	U	0.06	0	U	0.05	0.08	J	0.08
Lead-210 (Pb-210)	418	1.2	U	3.74	-13.52	U	23.53	28.53		11.98	1.75	U	6.42	13.43	J	20.79	1.33	U	3.96	-1.01	U	23.57
Lead-212 (Pb-212)	661,000	1.44		0.32	1.12		0.25	257.94		30.45	11.07		1.63	1.32		0.29	1.6		0.37	1.27		0.3
Lead-214 (Pb-214)	7,200,000		U			U			U			U			U			U			U	
Potassium-40 (K-40)	25.9	20.28		4.18	21.01		3.87	14.5		6.94	17.16		3.75	27.55		4.76	28.05		5.42	21.17		4.06
Radium-226* (Ra-226)	2.48	1.33		0.34	1.36		0.3	63.72		7.1	4.16		0.8	1.62		0.36	1.51		0.38	1.36		0.28
Radium-228 (Ra-228)	15.9	1.21		0.58	1.5		0.45	268.39		29.02	10.53		1.71	1.88		0.53	1.64		0.58	1.51		0.52
Thallium-208 (Tl-208)	2,430,000	0.5		0.15	0.4		0.16	81.01		8.90	3.53		0.6	0.53		0.16	0.55		0.22	0.3	J	0.18
Thorium-228 (Th-228)	14,100	1.24		0.38	1.38		0.42	68.3	J	11.2	7.51		1.45	1.33		0.55	1.23	J	0.48	1.42		0.42
Thorium-230 (Th-230)	2,090	0.62		0.24	0.8		0.29	31.9	J	5.41	2.51		0.62	1.11		0.48	0.9		0.39	1.12		0.36
Thorium-232 Th-232)	2,020	0.62		0.24	1.04		0.34	67.6	J	11.1	6.76		1.33	1.14		0.48	0.77		0.35	0.97		0.32
Thorium-234 Th-234)	47,900	2.3	J	2.42	1.01	U	4.22	38.29		9.11	2.06	U	3.75	3.49	J	4.31	1.27	U	2.64	3.17	J	2.22
Uranium-233/234 (U-233/234)	3,330	0.94	J	0.26	0.73		0.22	43.4		7.91	3.59		0.73	1.41		0.35	0.65		0.22	1.39		0.35
Uranium-235/236 (U-235/236)	39.2	0	UJ	0.06	0.05		0.06	1.97		0.66	0.26		0.15	0.18		0.12	0.06		0.07	0.16		0.11
Uranium-235 (U-235)	39.2	0.1	R	0.15	0.22	R	0.14	8.64	R	1.3	0.51	R	0.3	0.15	R	0.16	0.27	R	0.17	0.27	R	0.2
Uranium-238 (U-238)	3,720	1	J	0.27	1.09		0.29	45.4		8.26	3.82		0.77	1.27		0.33	1.16		0.31	1.46		0.37

Notes:

RST 3 - Removal Support Team 3.

No. - Number; U - Not detected; J - An estimated result; R - A rejected result.

UJ - The analyte was not detected, but the required Minimum Detectable Activity (MDA) was not attained. A number of specific problems also resulted in assignment of a J qualifier where results were more uncertain than usual.

[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Level (SSAL) values are presented in picocuries per gram (pCi/g).

Values in red equal or exceed the EPA SSAL for the respective radioisotope.

- Radium-226* (21-day ingrowth) analyzed by gamma spectroscopy via EPA 901.1 modified (soil only).
- Depending on the analytical method used, if the detection limit of the laboratory instrument is not low enough a negative result is generated if the sample contains low or no detection of the target radionuclide.

Table 4: Validated Soil Analytical Results Summary Table - Radioisotopes
Niagara Falls Boulevard Radiological Site
Niagara Falls Boulevard, Niagara Falls, New York
March 2016

	Location No.	N002-SB007			N002-SB007			N002-SB007			N002-SB008			N002-SB008			N002-SB008			N002-SB008		
	RST 3 Sample No.	**N002-SB007-3036-01**			**N002-SB007-3642-01**			**N002-SB007-4248-01**			**N002-SB008-0006-01**			**N002-SB008-0612-01**			**N002-SB008-1218-01**			**N002-SB008-1824-01**		
	Sample Depth (inches)	30-36			36-42			42-48			0-6			6-12			12-18			18-24		
	Sample Matrix	Soil			Soil			Soil			Soil			Soil			Soil			Soil		
	Sample Date	3/3/2016			3/3/2016			3/3/2016			3/2/2016			3/2/2016			3/2/2016			3/2/2016		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**																					
Actinium-228 (Ac-228)	126,000		U			U			U			U			U			U			U	
Bismuth-212 (Bi-212)	6,330,000	2.25	J	2.19	1.63	J	1.35	1.53		1.48	9.83		3.12	7.28		2.41	1.72	J	1.82	1.95	J	1.92
Bismuth-214 (Bi-214)	1,290,000		U			U			U			U			U			U			U	
Cesium-137 (Cs-137)	11	0	U	0.17	0	U	0.04	0	U	0.04	0.09	U	0.23	0.06	U	0.18	0	U	0.02	0.06	U	0.17
Lead-210 (Pb-210)	418	3.13	J	3.31	2.12	U	18.9	2.97	U	19.61	3.67	J	5.02	3.1	U	30.61	2.42	J	3.74	3.15	J	4.37
Lead-212 (Pb-212)	661,000	1.2		0.29	1.21		0.27	1.28		0.28	7.99		1.19	5.74		0.9	1.96		0.41	1.62		0.36
Lead-214 (Pb-214)	7,200,000		U			U			U			U			U			U			U	
Potassium-40 (K-40)	25.9	19.79		4.26	20.38		3.58	17.26		3.39	11.22		2.82	22.18		4.07	24.18		4.92	21.63		4.64
Radium-226* (Ra-226)	2.48	1.47		0.39	1.31		0.25	1.27		0.32	3.12		0.62	3.15		0.55	1.56		0.43	1.8		0.39
Radium-228 (Ra-228)	15.9	1.78		0.59	1.47		0.46	0.8		0.37	8.36		1.37	6.74		1.28	2.86		0.8	1.23		0.48
Thallium-208 (Tl-208)	2,430,000	0.28	J	0.24	0.41		0.13	0.51		0.14	2.75		0.5	1.9		0.36	0.62		0.23	0.59		0.19
Thorium-228 (Th-228)	14,100	0.92	J	0.31	1.13	J	0.36	1.15	J	0.37	5.55		1.12	4.72		1.03	1.41		0.43	1.44		0.41
Thorium-230 (Th-230)	2,090	0.92		0.3	0.93		0.3	0.8		0.29	2.22		0.56	2.7		0.68	1		0.34	1.02		0.32
Thorium-232 Th-232)	2,020	1.07		0.33	0.99		0.32	0.87		0.3	6.6		1.28	4.84		1.04	1.34		0.41	1.01		0.32
Thorium-234 Th-234)	47,900	2.72	J	2.2	2.39	J	3.66	2.14	U	1.66	1.38	U	1.08	4.66	J	4.98	2.52	J	1.7	0.54	U	2.82
Uranium-233/234 (U-233/234)	3,330	0.97		0.27	1.09		0.3	0.9		0.26	2.6		0.58	2.33		0.52	0.91		0.25	1.05		0.31
Uranium-235/236 (U-235/236)	39.2	0.08	J	0.08	0.01	U	0.07	0.04	J	0.07	0.18		0.13	0.14		0.1	0.03	J	0.06	0.02	U	0.08
Uranium-235 (U-235)	39.2	0.08	R	0.19	0.25	R	0.16	0.04	R	0.15	0.48	R	0.22	0.67	R	0.29	0.21	R	0.24	0.23	R	0.16
Uranium-238 (U-238)	3,720	0.96		0.27	1.41		0.35	0.83		0.25	2.31		0.53	1.8		0.43	1.04		0.27	1.02		0.31

	Location No.	N002-SB008			N002-SB008			N002-SB008			N002-SB008			N002-SB009			N002-SB009			N002-SB009		
	RST 3 Sample No.	**N002-SB008-2430-01**			**N002-SB008-3036-01**			**N002-SB008-3642-01**			**N002-SB008-4248-01**			**N002-SB009-0006-01**			**N002-SB009-0612-01**			**N002-SB009-1218-01**		
	Sample Depth (inches)	24-30			30-36			36-42			42-48			0-6			6-12			12-18		
	Sample Matrix	Soil			Soil			Soil			Soil			Soil			Soil			Soil		
	Sample Date	3/2/2016			3/2/2016			3/2/2016			3/2/2016			3/2/2016			3/2/2016			3/2/2016		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**																					
Actinium-228 (Ac-228)	126,000		U			U			U			U			U			U			U	
Bismuth-212 (Bi-212)	6,330,000	2.38		1.85	1.06	U	2.2	2.11	J	2.16	2.71	J	2.68	59.62		9.15	9.08		2.58	1.44	J	2.55
Bismuth-214 (Bi-214)	1,290,000		U			U			U			U			U			U			U	
Cesium-137 (Cs-137)	11	0.07	U	0.15	0	U	0.06	0.04	U	0.13	0	U	0.06	-0.27	U	0.42	0.05	U	0.2	-0.04	U	0.2
Lead-210 (Pb-210)	418	-4.11	U	26.22	-14.37	U	24.91	6.48	U	23.6	0.73	U	4.28	12.16	U	69.01	4.26	J	4.5	0	U	5.57
Lead-212 (Pb-212)	661,000	1.19		0.31	1.36		0.31	1		0.27	1.53		0.34	58.13		7.88	5.74		0.88	1.68		0.36
Lead-214 (Pb-214)	7,200,000		U			U			U			U			U			U			U	
Potassium-40 (K-40)	25.9	19.84		3.96	19.76		3.71	21.94		4.14	21.96		4.61	7.58		3.4	18.62		3.65	22.98		4.25
Radium-226* (Ra-226)	2.48	1.41		0.4	1.54		0.35	1.62		0.37	2		0.42	21.27		3	3.48		0.62	1.78		0.37
Radium-228 (Ra-228)	15.9	1.43		0.62	1.64		0.45	1.64		0.53	2.3		0.62	61.04		8.4	6.53		1.1	2.01		0.49
Thallium-208 (Tl-208)	2,430,000	0.53		0.2	0.4	J	0.14	0.42	J	0.18	0.7		0.19	18.25		2.48	2.09		0.4	0.62		0.16
Thorium-228 (Th-228)	14,100	1.09	J	0.35	1.34	J	0.4	1.24	J	0.39	1.14	J	0.38	26.7		4.5	6.06		1.26	1.18	J	0.4
Thorium-230 (Th-230)	2,090	1.15		0.35	1.04		0.33	0.83		0.3	0.91		0.32	12.2		2.18	2.98		0.74	1.44		0.44
Thorium-232 Th-232)	2,020	0.95		0.31	0.98		0.32	1.05		0.34	1.2		0.38	27.2		4.57	6.31		1.29	1.05		0.36
Thorium-234 Th-234)	47,900	1.82	U	1.87	1.51	U	2.1	2.09	U	5.04	1.48	U	2.86	22.17		11.52	6.83		2.28	0	U	2.26
Uranium-233/234 (U-233/234)	3,330	1.07		0.29	1.19		0.32	0.94		0.26	1.14		0.31	11	J	1.8	3.5		0.71	0.96		0.26
Uranium-235/236 (U-235/236)	39.2	0.01	U	0.07	0.03	J	0.07	0.07	J	0.07	0.06		0.07	0.69	J	0.23	0.16		0.11	0.1		0.08
Uranium-235 (U-235)	39.2	0.29	R	0.17	0.15	R	0.15	0.27	R	0.17	0.36	R	0.17	2.73	R	0.64	0.5	R	0.22	0.08	R	0.18
Uranium-238 (U-238)	3,720	1.17		0.31	1.29		0.34	0.98		0.27	1.07		0.29	12.5	J	2.03	3.43		0.7	1.12		0.29

Notes:

RST 3 - Removal Support Team 3.

No. - Number; U - Not detected; J - An estimated result; R - A rejected result.

UJ - The analyte was not detected, but the required Minimum Detectable Activity (MDA) was not attained. A number of specific problems also resulted in assignment of a J qualifier where results were more uncertain than usual.

[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Level (SSAL) values are presented in picocuries per gram (pCi/g).

Values in red equal or exceed the EPA SSAL for the respective radioisotope.

- Radium-226* (21-day ingrowth) analyzed by gamma spectroscopy via EPA 901.1 modified (soil only).
- Depending on the analytical method used, if the detection limit of the laboratory instrument is not low enough a negative result is generated if the sample contains low or no detection of the target radionuclide.

Table 4: Validated Soil Analytical Results Summary Table - Radioisotopes
Niagara Falls Boulevard Radiological Site
Niagara Falls Boulevard, Niagara Falls, New York
March 2016

	Location No.	N002-SB009			N002-SB009			N002-SB009			N002-SB009			N002-SB009			N002-SB010			N002-SB010		
	RST 3 Sample No.	**N002-SB009-1824-01**			**N002-SB009-2430-01**			**N002-SB009-3036-01**			**N002-SB009-3642-01**			**N002-SB009-4248-01**			**N002-SB010-0006-01**			**N002-SB010-0612-01**		
	Sample Depth (inches)	18-24			24-30			30-36			36-42			42-48			0-6			6-12		
	Sample Matrix	Soil			Soil			Soil			Soil			Soil			Soil			Soil		
	Sample Date	3/2/2016			3/2/2016			3/2/2016			3/2/2016			3/2/2016			3/1/2016			3/1/2016		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**																					
Actinium-228 (Ac-228)	126,000		U			U			U			U			U			U			U	
Bismuth-212 (Bi-212)	6,330,000	2.27		2.02	0.38	U	2.23	3.1		2.07	1.9	J	2.82	1.13	U	2.88	21.96		4.62	14.31		3.63
Bismuth-214 (Bi-214)	1,290,000		U			U			U			U			U			U			U	
Cesium-137 (Cs-137)	11	0.1	J	0.1	0.02	U	0.15	0	U	0.09	0.05	U	0.14	0.01	U	0.16	-0.15	U	0.29	0	U	0.04
Lead-210 (Pb-210)	418	2.39	U	3.72	4.06	U	22.66	4	U	4.02	10.7	U	19.03	1.07	U	4.6	7.91	U	41.53	4.78	J	6.12
Lead-212 (Pb-212)	661,000	1.31		0.31	1.44		0.33	1.36		0.34	1.4		0.33	1.56		0.37	14.87		2.11	11.78		1.7
Lead-214 (Pb-214)	7,200,000		U			U			U			U			U			U			U	
Potassium-40 (K-40)	25.9	24.02		4.86	19.96		3.64	19.54		4.43	20.18		4.75	23.06		4.81	12.85		2.78	15		3.27
Radium-226* (Ra-226)	2.48	1.83		0.4	1.64		0.35	1.74		0.42	1.57		0.37	1.7		0.38	6.46		1.05	5.23		0.88
Radium-228 (Ra-228)	15.9	1.59		0.42	1.66		0.54	1.27		0.63	1.73		0.48	1.2		0.7	16.19		2.47	11.05		1.71
Thallium-208 (Tl-208)	2,430,000	0.6		0.22	0.55		0.18	0.41	J	0.3	0.44	J	0.14	0.51		0.22	5.28		0.81	3.98		0.64
Thorium-228 (Th-228)	14,100	1.63		0.47	1.29	J	0.4	1.38		0.42	1	J	0.37	1.16	J	0.36	11	J	2.04	10.1	J	1.87
Thorium-230 (Th-230)	2,090	1.06		0.35	1.13		0.36	0.92		0.32	0.89		0.33	1.03	J	0.33	4.45	J	0.96	3.91	J	0.85
Thorium-232 Th-232)	2,020	1.03		0.35	0.98		0.33	1.1		0.35	0.94		0.34	1.18	J	0.36	11.7	J	2.14	10.3	J	1.89
Thorium-234 Th-234)	47,900	1.62	J	2.49	1.63	U	3.98	1.06	U	1.47	0	U	2.87	1.46	U	1.9	2.96	U	9.68	4.04	J	4.61
Uranium-233/234 (U-233/234)	3,330	1.39		0.36	1.1		0.29	0.93		0.27	1.12		0.31	1.23		0.32	3.92		0.75	3.88		0.77
Uranium-235/236 (U-235/236)	39.2	0.11		0.1	0.06	J	0.07	0.08		0.08	0.08	J	0.08	0.05	J	0.07	0.29		0.15	0.11		0.1
Uranium-235 (U-235)	39.2	0.22	R	0.16	0.26	R	0.13	0.05	R	0.2	0.28	R	0.16	0.17	R	0.2	0.95	R	0.38	0.68	R	0.33
Uranium-238 (U-238)	3,720	0.81		0.25	1.06		0.28	1.3		0.34	1.26		0.34	1.26		0.33	4.56		0.85	3.81		0.76

	Location No.	N002-SB010			N002-SB010			N002-SB010			N002-SB010			N002-SB010			N002-SB010			N002-SB010		
	RST 3 Sample No.	**N002-SB010-1218-01**			**N002-SB010-1218-02**			**N002-SB010-1824-01**			**N002-SB010-2430-01**			**N002-SB010-2430-02**			**N002-SB010-3036-01**			**N002-SB010-3642-01**		
	Sample Depth (inches)	12-18			12-18			18-24			24-30			24-30			30-36			36-42		
	Sample Matrix	Soil			Soil			Soil			Soil			Soil			Soil			Soil		
	Sample Date	3/1/2016			3/1/2016			3/1/2016			3/1/2016			3/1/2016			3/1/2016			3/1/2016		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**																					
Actinium-228 (Ac-228)	126,000		U			U			U			U			U			U			U	
Bismuth-212 (Bi-212)	6,330,000	2.71		1.36	2.46		1.45	1.92	J	1.51	1.92		1.49	1.63	J	1.91	2.57		1.49	0.42	U	0.67
Bismuth-214 (Bi-214)	1,290,000		U			U			U			U			U			U			U	
Cesium-137 (Cs-137)	11	0.08	J	0.11	0.08	J	0.1	0	U	0.06	-0.02	U	0.14	0.06	U	0.12	0.02	U	0.17	0.04	U	0.16
Lead-210 (Pb-210)	418	2.17	U	18.77	6.8	U	18.96	1.82	U	3.06	0.77	U	22.95	1.1	U	3.12	0	U	11.04	1.49	U	3.53
Lead-212 (Pb-212)	661,000	1.29		0.28	1.46		0.29	0.99		0.24	1.03		0.26	0.87		0.25	1.26		0.31	1.3		0.33
Lead-214 (Pb-214)	7,200,000		U			U			U			U			U			U			U	
Potassium-40 (K-40)	25.9	16.71		3.3	18.86		3.38	17.54		3.7	20.27		3.8	14.67		3.94	21.73		4.04	19.45		4.32
Radium-226* (Ra-226)	2.48	1.14		0.29	1.37		0.28	1.49		0.32	1.37		0.27	1.34		0.33	1.4		0.38	1.72		0.42
Radium-228 (Ra-228)	15.9	1.33		0.43	1.6		0.4	1.23		0.45	1.26		0.48	1.52		0.53	1.59		0.54	1.45		0.43
Thallium-208 (Tl-208)	2,430,000	0.25	J	0.17	0.51		0.14	0.3		0.11	0.34		0.21	0.43		0.16	0.47		0.15	0.38		0.29
Thorium-228 (Th-228)	14,100	1.14	J	0.4	1.35	J	0.44	1.02	J	0.34	1.4	J	0.48	1.21	J	0.41	0.86	J	0.3	1.1	J	0.37
Thorium-230 (Th-230)	2,090	0.58	J	0.27	0.73	J	0.29	1	J	0.33	1	J	0.38	0.83	J	0.32	0.9	J	0.29	1.01	J	0.34
Thorium-232 Th-232)	2,020	1.21	J	0.4	1.15	J	0.38	0.74	J	0.27	0.73	J	0.31	1.11	J	0.38	0.86	J	0.29	0.79	J	0.29
Thorium-234 Th-234)	47,900	0.96	U	3.97	0	U	2.64	1.8	J	2.02	3.28	J	2.75	1.9	J	1.84	3.46	J	3.31	1.87	J	1.97
Uranium-233/234 (U-233/234)	3,330	1.07		0.31	1.11		0.33	0.96		0.27	0.95		0.3	1.05		0.3	0.89		0.26	0.91		0.26
Uranium-235/236 (U-235/236)	39.2	0.09	J	0.09	0.03	U	0.08	0.01	U	0.06	0.09		0.09	0.04	J	0.07	0.07	J	0.08	0.06	J	0.07
Uranium-235 (U-235)	39.2	0.12	R	0.15	0.18	R	0.1	0.21	R	0.11	0.23	R	0.18	0.09	R	0.15	0.06	R	0.19	0.42	R	0.16
Uranium-238 (U-238)	3,720	0.96		0.29	0.98		0.3	1.06		0.29	0.94		0.29	1.03		0.3	1.04		0.29	1.12		0.3

Notes:

RST 3 - Removal Support Team 3.

No. - Number; U - Not detected; J - An estimated result; R - A rejected result.

UJ - The analyte was not detected, but the required Minimum Detectable Activity (MDA) was not attained. A number of specific problems also resulted in assignment of a J qualifier where results were more uncertain than usual.

[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Level (SSAL) values are presented in picocuries per gram (pCi/g).

Values in red equal or exceed the EPA SSAL for the respective radioisotope.

- Radium-226* (21-day ingrowth) analyzed by gamma spectroscopy via EPA 901.1 modified (soil only).
- Depending on the analytical method used, if the detection limit of the laboratory instrument is not low enough a negative result is generated if the sample contains low or no detection of the target radionuclide.

Table 4: Validated Soil Analytical Results Summary Table - Radioisotopes
Niagara Falls Boulevard Radiological Site
Niagara Falls Boulevard, Niagara Falls, New York
March 2016

	Location No.	N002-SB010			N002-SB010			N002-SB011			N002-SB011			N002-SB011			N002-SB011			N002-SB011		
	RST 3 Sample No.	**N002-SB010-3642-02**			**N002-SB010-4248-01**			**N002-SB011-0006-01**			**N002-SB011-0612-01**			**N002-SB011-1218-01**			**N002-SB011-1824-01**			**N002-SB011-2430-01**		
	Sample Depth (inches)	36-42			42-48			0-6			6-12			12-18			18-24			24-30		
	Sample Matrix	Soil			Soil			Soil			Soil			Soil			Soil			Soil		
	Sample Date	3/1/2016			3/1/2016			3/1/2016			3/1/2016			3/1/2016			3/1/2016			3/1/2016		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**																					
Actinium-228 (Ac-228)	126,000		U			U			U			U			U			U			U	
Bismuth-212 (Bi-212)	6,330,000	3.62		1.71	2.2	J	2.16	29.74		4.85	26.48		6	3.98		1.6	1.7	U	1.46	1.52	J	2.87
Bismuth-214 (Bi-214)	1,290,000	ND	U			U			U			U			U			U			U	
Cesium-137 (Cs-137)	11	-0.02	U	0.17	0	U	0.03	-0.19	U	0.27	0	U	0.11	0.02	U	0.13	0	U	0.02	0.02	U	0.17
Lead-210 (Pb-210)	418	0	U	13.19	1.28	U	3.32	19.45	U	42.48	3.88	U	7.46	5.25	U	24.61	0.36	U	4.3	0	U	11.61
Lead-212 (Pb-212)	661,000	1.11		0.26	1.74		0.37	27.83		3.8	20.06		2.81	3		0.65	1.38		0.34	1.19		0.3
Lead-214 (Pb-214)	7,200,000		U			U			U			U			U			U			U	
Potassium-40 (K-40)	25.9	20.3		3.88	20.23		4.3	5.58		1.66	13.66		3.64	24.2		4.21	24.46		5.02	19.77		3.75
Radium-226* (Ra-226)	2.48	1.52		0.38	1.67		0.4	6.88		1.02	6.88		1.03	1.4		0.39	1.69		0.42	1.57		0.37
Radium-228 (Ra-228)	15.9	1.05		0.6	2.33		0.59	30.51		4.24	19.89		2.89	2.54		0.67	1.26		0.49	1.39		0.52
Thallium-208 (Tl-208)	2,430,000	0.32		0.21	0.49		0.18	9.58		1.33	6.86		1.03	0.92		0.23	0.55		0.18	0.37		0.17
Thorium-228 (Th-228)	14,100	1.03	J	0.36	0.93	J	0.34	21.4	J	3.68	15	J	2.65	2.49		0.65	1.16		0.42	1.16		0.39
Thorium-230 (Th-230)	2,090	0.99	J	0.34	1.03	J	0.34	8.35	J	1.58	5.91	J	1.17	1.32		0.42	1.42		0.46	1		0.35
Thorium-232 Th-232)	2,020	0.93	J	0.33	0.71	J	0.27	20.2	J	3.47	15.5	J	2.71	2.25		0.6	1.11		0.39	0.75		0.29
Thorium-234 Th-234)	47,900	3.15	J	3.03	0.85	U	2.64	17.35		7.28	5.78	J	4.5	3.33	J	3.11	2.33	J	2.96	1.87	U	4.5
Uranium-233/234 (U-233/234)	3,330	1.22		0.33	0.82		0.26	8.91		1.6	6.19		1.09	1.36		0.35	1.1		0.3	0.9		0.28
Uranium-235/236 (U-235/236)	39.2	0	U	0.07	0.12		0.1	0.46		0.21	0.22		0.12	0.05	J	0.07	0.1	J	0.09	0.1		0.09
Uranium-235 (U-235)	39.2	0.3	R	0.15	0.15	R	0.17	1.06	R	0.37	1.18	R	0.4	0.19	R	0.17	0.3	R	0.18	0.27	R	0.14
Uranium-238 (U-238)	3,720	0.86		0.26	0.89		0.27	8.78		1.58	6.7		1.16	1.31		0.34	1.07		0.29	1.22		0.33

	Location No.	N002-SB011			N002-SB011			N002-SB011			N002-SB012			N002-SB012			N002-SB012			N002-SB012		
	RST 3 Sample No.	**N002-SB011-3036-01**			**N002-SB011-3642-01**			**N002-SB011-4248-01**			**N002-SB012-0006-01**			**N002-SB012-0612-01**			**N002-SB012-1218-01**			**N002-SB012-1824-01**		
	Sample Depth (inches)	30-36			36-42			42-48			0-6			6-12			12-18			18-24		
	Sample Matrix	Soil			Soil			Soil			Soil			Soil			Soil			Soil		
	Sample Date	3/1/2016			3/1/2016			3/1/2016			3/1/2016			3/1/2016			3/1/2016			3/1/2016		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**																					
Actinium-228 (Ac-228)	126,000		U			U			U			U			U			U			U	
Bismuth-212 (Bi-212)	6,330,000	2.49	J	2.39	1.03	J	1.95	2.76		1.79	10.43		2.76	0.56	U	2.41	0	U	1.78	5.09		2.09
Bismuth-214 (Bi-214)	1,290,000		U			U			U			U			U			U			U	
Cesium-137 (Cs-137)	11	0	U	0.06	0.03	U	0.15	0.2		0.1	0	U	0.07	0.07	J	0.1	0	U	0.03	0	U	0.04
Lead-210 (Pb-210)	418	0	U	3.04	0	U	7.3	3.19	J	4.09	0	U	16.6	0	U	3.1	0	U	3.4	0	U	14.23
Lead-212 (Pb-212)	661,000	1.52		0.37	1.19		0.28	1.44		0.35	10.59		1.54	1.83		0.38	1.29		0.33	1.53		0.34
Lead-214 (Pb-214)	7,200,000		U			U			U			U			U			U			U	
Potassium-40 (K-40)	25.9	19.91		4.43	16.2		3.43	22.24		4.69	19.07		3.6	24.72		5.01	20.22		4.5	20.73		4.25
Radium-226* (Ra-226)	2.48	1.7		0.41	1.42		0.28	1.47		0.38	4.05		0.71	1.54		0.35	1.54		0.41	1.63		0.46
Radium-228 (Ra-228)	15.9	1.43		0.54	1.49		0.46	1.42		0.48	10.94		1.74	1.56		0.66	1.67		0.53	0.89		0.55
Thallium-208 (Tl-208)	2,430,000	0.64		0.2	0.3		0.24	0.57		0.19	3.59		0.58	0.59		0.21	0.54		0.21	0.48		0.17
Thorium-228 (Th-228)	14,100	2.04		0.56	1.37	J	0.4	1.24		0.38	9.76		1.79	1.12		0.39	1.05		0.35	1		0.34
Thorium-230 (Th-230)	2,090	1.41		0.43	1		0.32	0.98		0.32	3.57		0.78	0.84		0.32	1.04		0.33	1.05		0.35
Thorium-232 Th-232)	2,020	0.95		0.34	0.89		0.3	0.86		0.29	9.41		1.73	1.06		0.36	1.02		0.33	1.07		0.35
Thorium-234 Th-234)	47,900	0.2	U	2.95	3.57		4.1	1.63	U	2.34	5.84	J	8.13	2.01	J	1.42	1.25	U	2.58	3.18	J	3.6
Uranium-233/234 (U-233/234)	3,330	1.08		0.3	0.98		0.28	0.78		0.23	3.44		0.72	0.87		0.25	1.18		0.3	1.14		0.3
Uranium-235/236 (U-235/236)	39.2	0.03	J	0.07	0.07		0.07	0.1		0.08	0.14		0.11	0.03	J	0.06	0.08		0.08	0.07	J	0.07
Uranium-235 (U-235)	39.2	0.32	R	0.28	0.33	R	0.16	0.18	R	0.22	0.48	R	0.25	0.26	R	0.22	0.35	R	0.24	0.44	R	0.23
Uranium-238 (U-238)	3,720	1.18		0.31	1.03		0.29	0.77		0.23	3.43		0.72	1.17		0.3	1.12		0.29	1.29		0.33

Notes:

RST 3 - Removal Support Team 3.

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Niagara Falls Boulevard Radiological Site
Niagara Falls Boulevard, Niagara Falls, New York
March 2016

	Location No.	N002-SB012			N002-SB012			N002-SB012			N002-SB012			N002-SB013			N002-SB013			N002-SB013		
	RST 3 Sample No.	**N002-SB012-2430-01**			**N002-SB012-3036-01**			**N002-SB012-3642-01**			**N002-SB012-4248-01**			**N002-SB013-0006-01**			**N002-SB013-0612-01**			**N002-SB013-1218-01**		
	Sample Depth (inches)	24-30			30-36			36-42			42-48			0-6			6-12			12-18		
	Sample Matrix	Soil			Soil			Soil			Soil			Soil			Soil			Soil		
	Sample Date	3/1/2016			3/1/2016			3/1/2016			3/1/2016			3/1/2016			3/1/2016			3/1/2016		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**																					
Actinium-228 (Ac-228)	126,000		U			U			U			U			U			U			U	
Bismuth-212 (Bi-212)	6,330,000	1.02	U	3.38	1.31	J	2.2	0	U	1.69	1.67	J	1.69	8.64		2.61	37.77		7.21	8.91		2.82
Bismuth-214 (Bi-214)	1,290,000		U			U			U			U			U			U			U	
Cesium-137 (Cs-137)	11	0	UJ	0.03	0	UJ	0.03	0	UJ	0.07	0	UJ	0.12	0	UJ	0.02	-0.08	UJ	0.34	0.02	UJ	0.19
Lead-210 (Pb-210)	418	2.89	J	3.81	1.34	U	19.33	0.45	U	3.33	6.28	U	17.55	5.88		3.54	12.78	U	54.98	1.04		5.18
Lead-212 (Pb-212)	661,000	1.34		0.33	1.13		0.28	1.41		0.32	1.1		0.27	7.03		1.05	28.39		3.92	5.35		0.84
Lead-214 (Pb-214)	7,200,000		U			U			U			U			U			U			U	
Potassium-40 (K-40)	25.9	24.52		5.11	15.23		3.15	19.33		4.07	20.33		3.73	2.82		1.87	19.04		4.44	22.1		4.29
Radium-226* (Ra-226)	2.48	1.99		0.44	1.33		0.3	1.36		0.32	1.31		0.3	2.93		0.55	10.98		1.68	3.66		0.71
Radium-228 (Ra-228)	15.9	1.91		0.66	1.88		0.48	1		0.62	1.15		0.47	7.04		1.13	29.18		4.21	5.44		0.97
Thallium-208 (Tl-208)	2,430,000	0.44		0.23	0.4		0.14	0.46		0.14	0.48		0.14	2.35		0.42	9.56		1.37	1.85		0.36
Thorium-228 (Th-228)	14,100	1.22		0.43	1.22		0.35	0.78		0.3	0.96		0.34	4.74		0.98	23.4		3.99	3.56		0.83
Thorium-230 (Th-230)	2,090	1.19		0.4	0.97		0.29	0.87		0.32	0.69		0.27	1.8		0.47	8.07		1.53	2.3		0.6
Thorium-232 Th-232)	2,020	1		0.36	0.84		0.27	0.85		0.31	1.16		0.37	4.18		0.88	22.7		3.87	3.72		0.85
Thorium-234 Th-234)	47,900	2.89	J	2.41	0.24	U	4.14	0.51	U	2.56	4.79		2.69	3.63	J	2.84	23.58		5.76	0.88	U	3.9
Uranium-233/234 (U-233/234)	3,330	0.94		0.29	0.99		0.28	0.72		0.24	0.85		0.25	1.93		0.42	8.12		1.42	1.86		0.43
Uranium-235/236 (U-235/236)	39.2	0	U	0.08	0.09		0.08	0.09	J	0.09	0.03	J	0.06	0.15		0.1	0.52		0.21	0.12	J	0.1
Uranium-235 (U-235)	39.2	0.38	R	0.15	0.12	R	0.13	0.34	R	0.25	0.18	R	0.12	0.42	R	0.22	1.26	R	0.37	0.5	R	0.23
Uranium-238 (U-238)	3,720	1.17		0.33	1.02		0.29	0.76		0.24	0.7		0.22	2		0.43	8.48		1.47	2.25		0.49

	Location No.	N002-SB013			N002-SB013			N002-SB013			N002-SB013			N002-SB013			N002-SB014			N002-SB014		
	RST 3 Sample No.	**N002-SB013-1824-01**			**N002-SB013-2430-01**			**N002-SB013-3036-01**			**N002-SB013-3642-01**			**N002-SB013-4248-01**			**N002-SB014-0006-01**			**N002-SB014-0612-01**		
	Sample Depth (inches)	18-24			24-30			30-36			36-42			42-48			0-6			6-12		
	Sample Matrix	Soil			Soil			Soil			Soil			Soil			Soil			Soil		
	Sample Date	3/1/2016			3/1/2016			3/1/2016			3/1/2016			3/1/2016			3/2/2016			3/2/2016		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**																					
Actinium-228 (Ac-228)	126,000		U			U			U			U			U			U			U	
Bismuth-212 (Bi-212)	6,330,000	4.15		1.59	3.28		2.28	3.03		1.41	1.69	J	2.3	0	U	1.17	35.41		7.13	3.83		1.84
Bismuth-214 (Bi-214)	1,290,000		U			U			U			UJ			U			U			U	
Cesium-137 (Cs-137)	11	-0.01	UJ	0.16	0	UJ	0.07	-0.05	UJ	0.18	0	U	0.05	-0.03	UJ	0.13	0	UJ	0.24	-0.04	UJ	0.18
Lead-210 (Pb-210)	418	2.96	U	23.9	2.46	U	4.32	0	U	5.31	0.45		4.31	10.88	J	15.7	13.56		10.49	3.34	U	22.98
Lead-212 (Pb-212)	661,000	1.98		0.41	1.66		0.38	1.43		0.31	1.18		0.3	1.08		0.27	34.68		4.81	1.84		0.38
Lead-214 (Pb-214)	7,200,000		U			U			U			U			U			U			U	
Potassium-40 (K-40)	25.9	24.05		4.32	24.64		5.07	21.79		3.99	18.39		4.18	18.37		3.39	20.51		4.65	25.38		4.56
Radium-226* (Ra-226)	2.48	1.78		0.4	1.77		0.42	1.65		0.32	1.64		0.42	1.42		0.33	15.61		2.3	1.77		0.36
Radium-228 (Ra-228)	15.9	2.2		0.55	1.52		0.6	1.81		0.51	1.38		0.56	0.85		0.51	35.09		4.95	1.91		0.56
Thallium-208 (Tl-208)	2,430,000	0.82		0.21	0.73		0.2	0.48		0.15	0.63		0.21	0.42		0.13	11.19		1.65	0.63		0.21
Thorium-228 (Th-228)	14,100	0.82		0.34	1.32		0.42	1.02		0.34	1.09		0.44	1.14	J	0.56	22		3.88	1.46		0.48
Thorium-230 (Th-230)	2,090	0.51		0.25	0.9		0.32	0.71		0.27	1.04		0.41	0.39	J	0.32	13.7		2.53	1.51		0.48
Thorium-232 Th-232)	2,020	0.4		0.21	1.03		0.34	1.09		0.34	0.94		0.38	1.01	J	0.5	20.8		3.67	1.38		0.45
Thorium-234 Th-234)	47,900	0		2.52	1	U	2.56	1.38	U	4.09	0	U	1.71	2.2	U	2.9	17.4		6.75	1.6	U	1.88
Uranium-233/234 (U-233/234)	3,330	1.38		0.35	1		0.28	1.13		0.31	1.27		0.34	0.81		0.26	15.5		2.6	1.2		0.32
Uranium-235/236 (U-235/236)	39.2	0.08		0.08	0.03	J	0.07	0.06		0.07	0.12		0.1	0.06	J	0.08	0.74		0.27	0.06		0.07
Uranium-235 (U-235)	39.2	0.14	R	0.2	0.33	R	0.26	0.2	R	0.16	0.32	R	0.14	0.25	R	0.17	1.9	R	0.58	0.15	R	0.18
Uranium-238 (U-238)	3,720	1.53		0.38	1.12		0.3	1.14		0.31	1.09		0.31	0.97		0.29	15.8		2.63	0.99		0.28

Notes:

RST 3 - Removal Support Team 3.

No. - Number; U - Not detected; J - An estimated result; R - A rejected result.

UJ - The analyte was not detected, but the required Minimum Detectable Activity (MDA) was not attained. A number of specific problems also resulted in assignment of a J qualifier where results were more uncertain than usual.

[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Level (SSAL) values are presented in picocuries per gram (pCi/g).

Values in red equal or exceed the EPA SSAL for the respective radioisotope.

- Radium-226* (21-day ingrowth) analyzed by gamma spectroscopy via EPA 901.1 modified (soil only).
- Depending on the analytical method used, if the detection limit of the laboratory instrument is not low enough a negative result is generated if the sample contains low or no detection of the target radionuclide.

Table 4: Validated Soil Analytical Results Summary Table - Radioisotopes
Niagara Falls Boulevard Radiological Site
Niagara Falls Boulevard, Niagara Falls, New York
March 2016

	Location No.	N002-SB014			N002-SB014			N002-SB014			N002-SB014			N002-SB014			N002-SB014		
	RST 3 Sample No.	**N002-SB014-1218-01**			**N002-SB014-1824-01**			**N002-SB014-2430-01**			**N002-SB014-3036-01**			**N002-SB014-3642-01**			**N002-SB014-4248-01**		
	Sample Depth (inches)	12-18			18-24			24-30			30-36			36-42			42-48		
	Sample Matrix	Soil			Soil			Soil			Soil			Soil			Soil		
	Sample Date	3/2/2016			3/2/2016			3/2/2016			3/2/2016			3/2/2016			3/2/2016		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**																		
Actinium-228 (Ac-228)	126,000		U			U			U			U			U			U	
Bismuth-212 (Bi-212)	6,330,000	2.42	J	2.57	2.12		1.96	3.89		2.11	1.17	J	2.02	0.05	U	3.22	2.74		1.56
Bismuth-214 (Bi-214)	1,290,000		U			U			U			U			U			U	
Cesium-137 (Cs-137)	11	0	UJ	0.02	-0.03	UJ	0.16	0.1	UJ	0.18	-0.02	UJ	0.13	0.05	UJ	0.16	-0.04	UJ	0.15
Lead-210 (Pb-210)	418	0.5	U	3.82	8.83	U	23.53	1.47	U	4.28	0	U	4.84	0.42	U	3.76	0	U	7.62
Lead-212 (Pb-212)	661,000	1.58		0.34	1.21		0.3	1.33		0.34	1.23		0.29	1.28		0.32	1'24		0.28
Lead-214 (Pb-214)	7,200,000		U			U			U			U			U			U	
Potassium-40 (K-40)	25.9	22.14		4.43	20.18		3.76	18.87		4.29	20.18		3.72	24.18		4.9	20.31		3.74
Radium-226* (Ra-226)	2.48	1.57		0.43	1.72		0.37	1.64		0.44	1.45		0.36	1.49		0.33	1.29		0.29
Radium-228 (Ra-228)	15.9	1.52		0.51	1.31		0.58	1.29		0.65	1.62		0.52	1.46		0.61	2.02		0.5
Thallium-208 (Tl-208)	2,430,000	0.42		0.15	0.55		0.17	0.5		0.16	0.48		0.17	0.54		0.18	0.47		0.18
Thorium-228 (Th-228)	14,100	1.23		0.48	1.2		0.4	1.19		0.39	1.18		0.37	1.09		0.36	0.95		0.34
Thorium-230 (Th-230)	2,090	0.7		0.34	1.07		0.36	0.83		0.3	0.98		0.32	1.07		0.35	0.97		0.33
Thorium-232 Th-232)	2,020	0.9		0.39	0.89		0.32	0.76		0.28	0.98		0.32	1.07		0.34	0.67		0.27
Thorium-234 Th-234)	47,900	0.09	U	2.56	0	U	2.82	3.41		2.58	1.21	U	4.96	1.55	U	1.93	0	U	3.5
Uranium-233/234 (U-233/234)	3,330	0.98		0.28	1.03		0.29	1.07		0.3	0.85		0.26	1.18		0.32	0.77		0.23
Uranium-235/236 (U-235/236)	39.2	0.05	J	0.07	0.09		0.08	0.08		0.08	0.07	J	0.08	0.04	J	0.07	0.05		0.06
Uranium-235 (U-235)	39.2	0.33	R	0.17	0.15	R	0.17	0.18	R	0.19	0.27	R	0.26	0.24	R	0.25	0.05	R	0.17
Uranium-238 (U-238)	3,720	0.89		0.26	0.96		0.27	1.21		0.32	1		0.28	0.82		0.25	0.8		0.24

	Location No.	Rinsate Blank			Rinsate Blank			Rinsate Blank		
	RST 3 Sample No.	**RB-N-160301**			**RB-N-160302**			**RB-N-160303**		
	Sample Depth (inches)	NA			NA			NA		
	Sample Matrix	Aqueous			Aqueous			Aqueous		
	Sample Date	3/1/2016			3/2/2016			3/3/2016		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**									
Actinium-228 (Ac-228)	126,000		U			U			U	
Bismuth-212 (Bi-212)	6,330,000		U			U			U	
Bismuth-214 (Bi-214)	1,290,000		U			U			U	
Cesium-137 (Cs-137)	11		U			U			U	
Lead-210 (Pb-210)	418		U			U			U	
Lead-212 (Pb-212)	661,000		U			U			U	
Lead-214 (Pb-214)	7,200,000		U			U			U	
Potassium-40 (K-40)	25.9		U			U			U	
Radium-226* (Ra-226)	2.48		NA			NA			NA	
Radium-228 (Ra-228)	15.9		NA			NA			NA	
Thallium-208 (Tl-208)	2,430,000		U			U			U	
Thorium-228 (Th-228)	14,100	0.02	U	0.1	0.01	U	0.06	-0.01	U	0.07
Thorium-230 (Th-230)	2,090	0.01	U	0.04	0	U	0.04	0.02	U	0.07
Thorium-232 Th-232)	2,020	0	U	0.04	0	U	0.04	0	U	0.07
Thorium-234 Th-234)	47,900		U			U			U	
Uranium-233/234 (U-233/234)	3,330	0.13	J	0.13	0.05	J	0.09	0.03	J	0'08
Uranium-235/236 (U-235/236)	39.2	-0.01	U	0.14	-0.01	U	0.11	0.03	U	0.11
Uranium-235 (U-235)	39.2		U			U			U	
Uranium-238 (U-238)	3,720	0.05	J	0.1	0.02	U	0.09	0.02	U	0.08
Radium-226**	NS	0.06	U	0.25	0.12	U	0.26	-0.06	U	0.26
Radium-228***	NS	-0.04	U	0.3	-0.09	U	0.32	-0.20	U	0.25

Notes:

RST 3 - Removal Support Team 3.

No. - Number; U - Not detected; J - An estimated result; R - A rejected result.

UJ - The analyte was not detected, but the required Minimum Detectable Activity (MDA) was not attained. A number of specific problems also resulted in assignment of a J qualifier where results were more uncertain than usual.

pCi/g - picocuries per gram; µg/L - micrograms per liter; NA - Not analyzed; NS - Not specified.

[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Level (SSAL) values are presented in pCi/g.

Values in red equal or exceed the EPA SSAL for the respective radioisotope.

- Radium-226* (21-day ingrowth) analyzed by gamma spectroscopy via EPA 901.1 modified (soil only).
- Radium-226** analyzed via EPA Method 903.1 (aqueous only).
- Radium-228*** analyzed via EPA Method 904.0 (aqueous only).
- Depending on the analytical method used, if the detection limit of the laboratory instrument is not low enough a negative result is generated if the sample contains low or no detection of the target radionuclide.

ATTACHMENT C

Chain of Custody Record and FedEx Airbill

USEPA
DateShipped: 3/4/2016
CarrierName: FedEx
AirbillNo: 8022-3553-9513

CHAIN OF CUSTODY RECORD
Case #: 365
Contact Name: Bernard Nwosu
Contact Phone: 732-585-4413

No: 2-030416-165927-0005
Lab: PACE Analytical Services
Lab Contact: Justin Hensley
Lab Phone: 724-850-5600

Lab #	Sample #	Sample Date	Sample Time	Analyses	Matrix	Preservative	Lab QC	Numb Cont	Container
	N002-SB001-0006-01	3/2/2016	13:33	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB001-0006-01	3/2/2016	13:33	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB001-0006-01	3/2/2016	13:33	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB001-0612-01	3/2/2016	13:37	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB001-0612-01	3/2/2016	13:37	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB001-0612-01	3/2/2016	13:37	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB001-1218-01	3/2/2016	13:43	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB001-1218-01	3/2/2016	13:43	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB001-1218-01	3/2/2016	13:43	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB001-1824-01	3/2/2016	13:56	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB001-1824-01	3/2/2016	13:56	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB001-1824-01	3/2/2016	13:56	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB001-2430-01	3/2/2016	14:00	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB001-2430-01	3/2/2016	14:00	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB001-2430-01	3/2/2016	14:00	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB001-3036-01	3/2/2016	14:03	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB001-3036-01	3/2/2016	14:03	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB001-3036-01	3/2/2016	14:03	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB001-3642-01	3/2/2016	14:06	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar

Special Instructions: Gamma Spectroscopy analysis for soil samples to include: Ra-226 (in-growth), Ra-228, K-40, Tl-208, Bi-212, Bi-214, Pb-212, Pb-214, Ra-226, Ra-228, Th-234, U-235, Pb-210, Bi-210. Email results to s.sumbaly@westonsolutions.com and ben.nwosu@westonsolutions.com

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	[signature] RST 3	3/4/16			

USEPA
DateShipped: 3/4/2016
CarrierName: FedEx
AirbillNo: 8022-3553-9513

CHAIN OF CUSTODY RECORD
Case #: 365
Contact Name: Bernard Nwosu
Contact Phone: 732-585-4413

No: 2-030416-165927-0005
Lab: PACE Analytical Services
Lab Contact: Justin Hensley
Lab Phone: 724-850-5600

Lab #	Sample #	Sample Date	Sample Time	Analyses	Matrix	Preservative	Lab QC	Numb Cont	Container
	N002-SB001-3642-01	3/2/2016	14:06	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB001-3642-01	3/2/2016	14:06	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB001-4248-01	3/2/2016	14:13	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB001-4248-01	3/2/2016	14:13	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB001-4248-01	3/2/2016	14:13	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB002-0006-01	3/2/2016	10:28	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB002-0006-01	3/2/2016	10:28	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB002-0006-01	3/2/2016	10:28	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB002-0612-01	3/2/2016	11:19	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB002-0612-01	3/2/2016	11:19	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB002-0612-01	3/2/2016	11:19	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB002-0612-02	3/2/2016	11:22	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB002-0612-02	3/2/2016	11:22	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB002-0612-02	3/2/2016	11:22	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB002-1218-01	3/2/2016	11:23	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB002-1218-01	3/2/2016	11:23	Isotopic Thorium	Soil	4 C	Y	2	8 oz glass jar
	N002-SB002-1218-01	3/2/2016	11:23	Isotopic Uranium	Soil	4 C	Y	2	8 oz glass jar
	N002-SB002-1824-01	3/2/2016	11:25	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB002-1824-01	3/2/2016	11:25	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar

Special Instructions: Gamma Spectroscopy analysis for soil samples to include: Ra-226 (in-growth), Ra-228, K-40, Tl-208, Bi-212, Bi-214, Pb-212, Pb-214, Ra-226, Ra-228, Th-234, U-235, Pb-210, Bi-210. Email results to s.sumbaly@westonsolutions.com and ben.nwosu@westonsolutions.com

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Bernard Nwosu RST3	3/4/16			

USEPA
DateShipped: 3/4/2016
CarrierName: FedEx
AirbillNo: 8022-3553-9513

CHAIN OF CUSTODY RECORD
Case #: 365
Contact Name: Bernard Nwosu
Contact Phone: 732-585-4413

No: 2-030416-165927-0005
Lab: PACE Analytical Services
Lab Contact: Justin Hensley
Lab Phone: 724-850-5600

Lab #	Sample #	Sample Date	Sample Time	Analyses	Matrix	Preservative	Lab QC	Numb Cont	Container
	N002-SB002-1824-01	3/2/2016	11:25	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB002-1824-02	3/2/2016	11:27	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB002-1824-02	3/2/2016	11:27	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB002-1824-02	3/2/2016	11:27	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB002-2430-01	3/2/2016	11:30	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB002-2430-01	3/2/2016	11:30	Isotopic Thorium	Soil	4 C	Y	2	8 oz glass jar
	N002-SB002-2430-01	3/2/2016	11:30	Isotopic Uranium	Soil	4 C	Y	2	8 oz glass jar
	N002-SB002-3036-01	3/2/2016	11:33	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB002-3036-01	3/2/2016	11:33	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB002-3036-01	3/2/2016	11:33	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB002-3036-02	3/2/2016	11:34	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB002-3036-02	3/2/2016	11:34	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB002-3036-02	3/2/2016	11:34	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB002-3642-01	3/2/2016	11:36	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB002-3642-01	3/2/2016	11:36	Isotopic Thorium	Soil	4 C	Y	2	8 oz glass jar
	N002-SB002-3642-01	3/2/2016	11:36	Isotopic Uranium	Soil	4 C	Y	2	8 oz glass jar
	N002-SB002-4248-01	3/2/2016	11:40	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB002-4248-01	3/2/2016	11:40	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB002-4248-01	3/2/2016	11:40	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar

Special Instructions: Gamma Spectroscopy analysis for soil samples to include: Ra-226 (in-growth), Ra-228, K-40, Tl-208, Bi-212, Bi-214, Pb-212, Pb-214, Ra-226, Ra-228, Th-234, U-235, Pb-210, Bi-210. Email results to s.sumbaly@westonsolutions.com and ben.nwosu@westonsolutions.com

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USEPA
DateShipped: 3/4/2016
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CHAIN OF CUSTODY RECORD
Case #: 365
Contact Name: Bernard Nwosu
Contact Phone: 732-585-4413

No: 2-030416-165927-0005
Lab: PACE Analytical Services
Lab Contact: Justin Hensley
Lab Phone: 724-850-5600

Lab #	Sample #	Sample Date	Sample Time	Analyses	Matrix	Preservative	Lab QC	Numb Cont	Container
	N002-SB003-0006-01	3/3/2016	08:41	Gamma Spec (Modified)	Soil	4 C	N	1	Ziploc Bag
	N002-SB003-0006-01	3/3/2016	08:41	Isotopic Thorium	Soil	4 C	N	1	Ziploc Bag
	N002-SB003-0006-01	3/3/2016	08:41	Isotopic Uranium	Soil	4 C	N	1	Ziploc Bag
	N002-SB003-0612-01	3/3/2016	08:45	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB003-0612-01	3/3/2016	08:45	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB003-0612-01	3/3/2016	08:45	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB003-1218-01	3/3/2016	08:50	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB003-1218-01	3/3/2016	08:50	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB003-1218-01	3/3/2016	08:50	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB003-1824-01	3/3/2016	08:54	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB003-1824-01	3/3/2016	08:54	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB003-1824-01	3/3/2016	08:54	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB003-2430-01	3/3/2016	09:02	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB003-2430-01	3/3/2016	09:02	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB003-2430-01	3/3/2016	09:02	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB003-3036-01	3/3/2016	09:06	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB003-3036-01	3/3/2016	09:06	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB003-3036-01	3/3/2016	09:06	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB003-3642-01	3/3/2016	09:10	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar

Special Instructions: Gamma Spectroscopy analysis for soil samples to include: Ra-226 (in-growth), Ra-228, K-40, Tl-208, Bi-212, Bi-214, Pb-212, Pb-214, Ra-226, Ra-228, Th-234, U-235, Pb-210, Bi-210. Email results to s.sumbaly@westonsolutions.com and ben.nwosu@westonsolutions.com

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USEPA
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AirbillNo: 8022-3553-9513

CHAIN OF CUSTODY RECORD
Case #: 365
Contact Name: Bernard Nwosu
Contact Phone: 732-585-4413

No: 2-030416-165927-0005
Lab: PACE Analytical Services
Lab Contact: Justin Hensley
Lab Phone: 724-850-5600

Lab #	Sample #	Sample Date	Sample Time	Analyses	Matrix	Preservative	Lab QC	Numb Cont	Container
	N002-SB003-3642-01	3/3/2016	09:10	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB003-3642-01	3/3/2016	09:10	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB003-4248-01	3/3/2016	09:15	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB003-4248-01	3/3/2016	09:15	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB003-4248-01	3/3/2016	09:15	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB004-0006-01	3/3/2016	09:27	Gamma Spec (Modified)	Soil	4 C	N	1	Ziploc Bag
	N002-SB004-0006-01	3/3/2016	09:27	Isotopic Thorium	Soil	4 C	N	1	Ziploc Bag
	N002-SB004-0006-01	3/3/2016	09:27	Isotopic Uranium	Soil	4 C	N	1	Ziploc Bag
	N002-SB004-0612-01	3/3/2016	09:53	Gamma Spectroscopy	Soil	4 C	N	1	16 oz glass jar
	N002-SB004-0612-01	3/3/2016	09:53	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB004-0612-01	3/3/2016	09:53	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB004-1218-01	3/3/2016	10:00	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB004-1218-01	3/3/2016	10:00	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB004-1218-01	3/3/2016	10:00	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB004-1824-01	3/3/2016	10:04	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB004-1824-01	3/3/2016	10:04	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB004-1824-01	3/3/2016	10:04	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB004-2430-01	3/3/2016	10:08	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB004-2430-01	3/3/2016	10:08	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar

Special Instructions: Gamma Spectroscopy analysis for soil samples to include: Ra-226 (in-growth), Ra-228, K-40, Tl-208, Bi-212, Bi-214, Pb-212, Pb-214, Ra-226, Ra-228, Th-234, U-235, Pb-210, Bi-210. Email results to s.sumbaly@westonsolutions.com and ben.nwosu@westonsolutions.com

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CHAIN OF CUSTODY RECORD
Case #: 365
Contact Name: Bernard Nwosu
Contact Phone: 732-585-4413

No: 2-030416-165927-0005
Lab: PACE Analytical Services
Lab Contact: Justin Hensley
Lab Phone: 724-850-5600

Lab #	Sample #	Sample Date	Sample Time	Analyses	Matrix	Preservative	Lab QC	Numb Cont	Container
	N002-SB004-2430-01	3/3/2016	10:08	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB004-3036-01	3/3/2016	10:13	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB004-3036-01	3/3/2016	10:13	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB004-3036-01	3/3/2016	10:13	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB004-3642-01	3/3/2016	10:17	Gamma Spectroscopy	Soil	4 C	N	1	16 oz glass jar
	N002-SB004-3642-01	3/3/2016	10:17	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB004-3642-01	3/3/2016	10:17	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB004-4248-01	3/3/2016	10:20	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB004-4248-01	3/3/2016	10:20	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB004-4248-01	3/3/2016	10:20	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB005-0006-01	3/2/2016	15:00	Gamma Spec (Modified)	Soil	4 C	N	1	Ziploc Bag
	N002-SB005-0006-01	3/2/2016	15:00	Isotopic Thorium	Soil	4 C	N	1	Ziploc Bag
	N002-SB005-0006-01	3/2/2016	15:00	Isotopic Uranium	Soil	4 C	N	1	Ziploc Bag
	N002-SB005-0612-01	3/2/2016	15:18	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB005-0612-01	3/2/2016	15:18	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB005-0612-01	3/2/2016	15:18	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB005-1218-01	3/2/2016	15:25	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB005-1218-01	3/2/2016	15:25	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB005-1218-01	3/2/2016	15:25	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar

Special Instructions: Gamma Spectroscopy analysis for soil samples to include: Ra-226 (in-growth), Ra-228, K-40, Tl-208, Bi-212, Bi-214, Pb-212, Pb-214, Ra-226, Ra-228, Th-234, U-235, Pb-210, Bi-210. Email results to s.sumbaly@westonsolutions.com and ben.nwosu@westonsolutions.com

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	Bernard Nwosu RST3	3/4/16			

USEPA
DateShipped: 3/4/2016
CarrierName: FedEx
AirbillNo: 8022-3553-9513

CHAIN OF CUSTODY RECORD
Case #: 365
Contact Name: Bernard Nwosu
Contact Phone: 732-585-4413

No: 2-030416-165927-0005
Lab: PACE Analytical Services
Lab Contact: Justin Hensley
Lab Phone: 724-850-5600

Lab #	Sample #	Sample Date	Sample Time	Analyses	Matrix	Preservative	Lab QC	Numb Cont	Container
	N002-SB005-1824-01	3/2/2016	15:34	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB005-1824-01	3/2/2016	15:34	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB005-1824-01	3/2/2016	15:34	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB005-2430-01	3/2/2016	15:40	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB005-2430-01	3/2/2016	15:40	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB005-2430-01	3/2/2016	15:40	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB005-3036-01	3/2/2016	15:45	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB005-3036-01	3/2/2016	15:45	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB005-3036-01	3/2/2016	15:45	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB005-3642-01	3/2/2016	15:50	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB005-3642-01	3/2/2016	15:50	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB005-3642-01	3/2/2016	15:50	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB005-4248-01	3/2/2016	15:53	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB005-4248-01	3/2/2016	15:53	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB005-4248-01	3/2/2016	15:53	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB006-0006-01	3/3/2016	10:40	Gamma Spec (Modified)	Soil	4 C	N	1	Ziploc Bag
	N002-SB006-0006-01	3/3/2016	10:40	Isotopic Thorium	Soil	4 C	N	1	Ziploc Bag
	N002-SB006-0006-01	3/3/2016	10:40	Isotopic Uranium	Soil	4 C	N	1	Ziploc Bag
	N002-SB006-0612-01	3/3/2016	10:45	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar

Special Instructions: Gamma Spectroscopy analysis for soil samples to include: Ra-226 (in-growth), Ra-228, K-40, Tl-208, Bi-212, Bi-214, Pb-212, Pb-214, Ra-226, Ra-228, Th-234, U-235, Pb-210, Bi-210. Email results to s.sumbaly@westonsolutions.com and ben.nwosu@westonsolutions.com

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CHAIN OF CUSTODY RECORD
Case #: 365
Contact Name: Bernard Nwosu
Contact Phone: 732-585-4413

No: 2-030416-165927-0005
Lab: PACE Analytical Services
Lab Contact: Justin Hensley
Lab Phone: 724-850-5600

Lab #	Sample #	Sample Date	Sample Time	Analyses	Matrix	Preservative	Lab QC	Numb Cont	Container
	N002-SB006-0612-01	3/3/2016	10:45	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB006-0612-01	3/3/2016	10:45	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB006-1218-01	3/3/2016	10:48	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB006-1218-01	3/3/2016	10:48	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB006-1218-01	3/3/2016	10:48	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB006-1824-01	3/3/2016	10:52	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB006-1824-01	3/3/2016	10:52	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB006-1824-01	3/3/2016	10:52	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB006-2430-01	3/3/2016	10:57	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB006-2430-01	3/3/2016	10:57	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB006-2430-01	3/3/2016	10:57	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB006-3036-01	3/3/2016	11:07	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB006-3036-01	3/3/2016	11:07	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB006-3036-01	3/3/2016	11:07	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB006-3642-01	3/3/2016	11:13	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB006-3642-01	3/3/2016	11:13	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB006-3642-01	3/3/2016	11:13	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB006-4248-01	3/3/2016	11:30	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB006-4248-01	3/3/2016	11:30	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar

Special Instructions: Gamma Spectroscopy analysis for soil samples to include: Ra-226 (in-growth), Ra-228, K-40, Tl-208, Bi-212, Bi-214, Pb-212, Pb-214, Ra-226, Ra-228, Th-234, U-235, Pb-210, Bi-210. Email results to s.sumbaly@westonsolutions.com and ben.nwosu@westonsolutions.com

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	Bernard Nwosu RST3	3/4/16			

USEPA
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CarrierName: FedEx
AirbillNo: 8022-3553-9513

CHAIN OF CUSTODY RECORD
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Contact Name: Bernard Nwosu
Contact Phone: 732-585-4413

No: 2-030416-165927-0005
Lab: PACE Analytical Services
Lab Contact: Justin Hensley
Lab Phone: 724-850-5600

Lab #	Sample #	Sample Date	Sample Time	Analyses	Matrix	Preservative	Lab QC	Numb Cont	Container
	N002-SB006-4248-01	3/3/2016	11:30	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB007-0006-01	3/3/2016	13:04	Gamma Spec (Modified)	Soil	4 C	N	1	Ziploc Bag
	N002-SB007-0006-01	3/3/2016	13:04	Isotopic Thorium	Soil	4 C	N	1	Ziploc Bag
	N002-SB007-0006-01	3/3/2016	13:04	Isotopic Uranium	Soil	4 C	N	1	Ziploc Bag
	N002-SB007-0612-01	3/3/2016	13:08	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB007-0612-01	3/3/2016	13:08	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB007-0612-01	3/3/2016	13:08	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB007-1218-01	3/3/2016	13:11	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB007-1218-01	3/3/2016	13:11	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB007-1218-01	3/3/2016	13:11	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB007-1824-01	3/3/2016	13:15	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB007-1824-01	3/3/2016	13:15	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB007-1824-01	3/3/2016	13:15	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB007-2430-01	3/3/2016	13:17	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB007-2430-01	3/3/2016	13:17	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB007-2430-01	3/3/2016	13:17	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB007-3036-01	3/3/2016	13:27	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB007-3036-01	3/3/2016	13:27	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB007-3036-01	3/3/2016	13:27	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar

Special Instructions: Gamma Spectroscopy analysis for soil samples to include: Ra-226 (in-growth), Ra-228, K-40, Tl-208, Bi-212, Bi-214, Pb-212, Pb-214, Ra-226, Ra-228, Th-234, U-235, Pb-210, Bi-210. Email results to s.sumbaly@westonsolutions.com and ben.nwosu@westonsolutions.com

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Bernard Nwosu RST3	3/4/16			

USEPA
DateShipped: 3/4/2016
CarrierName: FedEx
AirbillNo: 8022-3553-9513

CHAIN OF CUSTODY RECORD
Case #: 365
Contact Name: Bernard Nwosu
Contact Phone: 732-585-4413

No: 2-030416-165927-0005
Lab: PACE Analytical Services
Lab Contact: Justin Hensley
Lab Phone: 724-850-5600

Lab #	Sample #	Sample Date	Sample Time	Analyses	Matrix	Preservative	Lab QC	Numb Cont	Container
	N002-SB007-3642-01	3/3/2016	13:32	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB007-3642-01	3/3/2016	13:32	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB007-3642-01	3/3/2016	13:32	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB007-4248-01	3/3/2016	13:36	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB007-4248-01	3/3/2016	13:36	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB007-4248-01	3/3/2016	13:36	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB008-0006-01	3/2/2016	12:17	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB008-0006-01	3/2/2016	12:17	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB008-0006-01	3/2/2016	12:17	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB008-0612-01	3/2/2016	12:20	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB008-0612-01	3/2/2016	12:20	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB008-0612-01	3/2/2016	12:20	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB008-1218-01	3/2/2016	12:25	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB008-1218-01	3/2/2016	12:25	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB008-1218-01	3/2/2016	12:25	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB008-1824-01	3/2/2016	12:29	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB008-1824-01	3/2/2016	12:29	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB008-1824-01	3/2/2016	12:29	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB008-2430-01	3/2/2016	12:31	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar

Special Instructions: Gamma Spectroscopy analysis for soil samples to include: Ra-226 (in-growth), Ra-228, K-40, Tl-208, Bi-212, Bi-214, Pb-212, Pb-214, Ra-226, Ra-228, Th-234, U-235, Pb-210, Bi-210. Email results to s.sumbaly@westonsolutions.com and ben.nwosu@westonsolutions.com

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	RST3	3/4/16			

USEPA
DateShipped: 3/4/2016
CarrierName: FedEx
AirbillNo: 8022-3553-9513

CHAIN OF CUSTODY RECORD
Case #: 365
Contact Name: Bernard Nwosu
Contact Phone: 732-585-4413

No: 2-030416-165927-0005
Lab: PACE Analytical Services
Lab Contact: Justin Hensley
Lab Phone: 724-850-5600

Lab #	Sample #	Sample Date	Sample Time	Analyses	Matrix	Preservative	Lab QC	Numb Cont	Container
	N002-SB008-2430-01	3/2/2016	12:31	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB008-2430-01	3/2/2016	12:31	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB008-3036-01	3/2/2016	12:33	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB008-3036-01	3/2/2016	12:33	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB008-3036-01	3/2/2016	12:33	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB008-3642-01	3/2/2016	12:36	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB008-3642-01	3/2/2016	12:36	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB008-3642-01	3/2/2016	12:36	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB008-4248-01	3/2/2016	12:40	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB008-4248-01	3/2/2016	12:40	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB008-4248-01	3/2/2016	12:40	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB009-0006-01	3/2/2016	09:45	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB009-0006-01	3/2/2016	09:45	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB009-0006-01	3/2/2016	09:45	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB009-0612-01	3/2/2016	09:48	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB009-0612-01	3/2/2016	09:48	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB009-0612-01	3/2/2016	09:48	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB009-1218-01	3/2/2016	09:51	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB009-1218-01	3/2/2016	09:51	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar

Special Instructions: Gamma Spectroscopy analysis for soil samples to include: Ra-226 (in-growth), Ra-228, K-40, Tl-208, Bi-212, Bi-214, Pb-212, Pb-214, Ra-226, Ra-228, Th-234, U-235, Pb-210, Bi-210. Email results to s.sumbaly@westonsolutions.com and ben.nwosu@westonsolutions.com

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	Bernard Nwosu RST3	3/4/16			

USEPA
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CarrierName: FedEx
AirbillNo: 8022-3553-9513

CHAIN OF CUSTODY RECORD
Case #: 365
Contact Name: Bernard Nwosu
Contact Phone: 732-585-4413

No: 2-030416-165927-0005
Lab: PACE Analytical Services
Lab Contact: Justin Hensley
Lab Phone: 724-850-5600

Lab #	Sample #	Sample Date	Sample Time	Analyses	Matrix	Preservative	Lab QC	Numb Cont	Container
	N002-SB009-1218-01	3/2/2016	09:51	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB009-1824-01	3/2/2016	09:56	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB009-1824-01	3/2/2016	09:56	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB009-1824-01	3/2/2016	09:56	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB009-2430-01	3/2/2016	10:00	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB009-2430-01	3/2/2016	10:00	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB009-2430-01	3/2/2016	10:00	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB009-3036-01	3/2/2016	10:02	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB009-3036-01	3/2/2016	10:02	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB009-3036-01	3/2/2016	10:02	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB009-3642-01	3/2/2016	10:06	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB009-3642-01	3/2/2016	10:06	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB009-3642-01	3/2/2016	10:06	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB009-4248-01	3/2/2016	10:10	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB009-4248-01	3/2/2016	10:10	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB009-4248-01	3/2/2016	10:10	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB010-0006-01	3/1/2016	16:30	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB010-0006-01	3/1/2016	16:30	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB010-0006-01	3/1/2016	16:30	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar

Special Instructions: Gamma Spectroscopy analysis for soil samples to include: Ra-226 (in-growth), Ra-228, K-40, Tl-208, Bi-212, Bi-214, Pb-212, Pb-214, Ra-226, Ra-228, Th-234, U-235, Pb-210, Bi-210. Email results to s.sumbaly@westonsolutions.com and ben.nwosu@westonsolutions.com

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CHAIN OF CUSTODY RECORD
Case #: 365
Contact Name: Bernard Nwosu
Contact Phone: 732-585-4413

No: 2-030416-165927-0005
Lab: PACE Analytical Services
Lab Contact: Justin Hensley
Lab Phone: 724-850-5600

Lab #	Sample #	Sample Date	Sample Time	Analyses	Matrix	Preservative	Lab QC	Numb Cont	Container
	N002-SB010-0612-01	3/1/2016	16:35	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB010-0612-01	3/1/2016	16:35	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB010-0612-01	3/1/2016	16:35	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB010-1218-01	3/1/2016	16:40	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB010-1218-01	3/1/2016	16:40	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB010-1218-01	3/1/2016	16:40	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB010-1218-02	3/1/2016	16:42	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB010-1218-02	3/1/2016	16:42	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB010-1218-02	3/1/2016	16:42	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB010-1824-01	3/1/2016	16:45	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB010-1824-01	3/1/2016	16:45	Isotopic Thorium	Soil	4 C	Y	2	8 oz glass jar
	N002-SB010-1824-01	3/1/2016	16:45	Isotopic Uranium	Soil	4 C	Y	2	8 oz glass jar
	N002-SB010-2430-01	3/1/2016	16:50	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB010-2430-01	3/1/2016	16:50	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB010-2430-01	3/1/2016	16:50	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB010-2430-02	3/1/2016	16:53	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB010-2430-02	3/1/2016	16:53	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB010-2430-02	3/1/2016	16:53	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB010-3036-01	3/1/2016	16:55	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar

Special Instructions: Gamma Spectroscopy analysis for soil samples to include: Ra-226 (in-growth), Ra-228, K-40, Tl-208, Bi-212, Bi-214, Pb-212, Pb-214, Ra-226, Ra-228, Th-234, U-235, Pb-210, Bi-210. Email results to s.sumbaly@westonsolutions.com and ben.nwosu@westonsolutions.com

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Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Bernard Nwosu RST3	3/4/16			

USEPA
DateShipped: 3/4/2016
CarrierName: FedEx
AirbillNo: 8022-3553-9513

CHAIN OF CUSTODY RECORD
Case #: 365
Contact Name: Bernard Nwosu
Contact Phone: 732-585-4413

No: 2-030416-165927-0005
Lab: PACE Analytical Services
Lab Contact: Justin Hensley
Lab Phone: 724-850-5600

Lab #	Sample #	Sample Date	Sample Time	Analyses	Matrix	Preservative	Lab QC	Numb Cont	Container
	N002-SB010-3036-01	3/1/2016	16:55	Isotopic Thorium	Soil	4 C	Y	2	8 oz glass jar
	N002-SB010-3036-01	3/1/2016	16:55	Isotopic Uranium	Soil	4 C	Y	2	8 oz glass jar
	N002-SB010-3642-01	3/1/2016	17:00	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB010-3642-01	3/1/2016	17:00	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB010-3642-01	3/1/2016	17:00	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB010-3642-02	3/1/2016	17:02	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB010-3642-02	3/1/2016	17:02	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB010-3642-02	3/1/2016	17:02	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB010-4248-01	3/1/2016	17:05	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB010-4248-01	3/1/2016	17:05	Isotopic Thorium	Soil	4 C	Y	2	8 oz glass jar
	N002-SB010-4248-01	3/1/2016	17:05	Isotopic Uranium	Soil	4 C	Y	2	8 oz glass jar
	N002-SB011-0006-01	3/1/2016	13:41	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB011-0006-01	3/1/2016	13:41	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB011-0006-01	3/1/2016	13:41	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB011-0612-01	3/1/2016	13:43	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB011-0612-01	3/1/2016	13:43	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB011-0612-01	3/1/2016	13:43	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB011-1218-01	3/1/2016	13:46	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB011-1218-01	3/1/2016	13:46	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar

Special Instructions: Gamma Spectroscopy analysis for soil samples to include: Ra-226 (in-growth), Ra-228, K-40, Tl-208, Bi-212, Bi-214, Pb-212, Pb-214, Ra-226, Ra-228, Th-234, U-235, Pb-210, Bi-210. Email results to s.sumbaly@westonsolutions.com and ben.nwosu@westonsolutions.com

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	Bernard Nwosu RST3	3/4/16			

USEPA
DateShipped: 3/4/2016
CarrierName: FedEx
AirbillNo: 8022-3553-9513

CHAIN OF CUSTODY RECORD
Case #: 365
Contact Name: Bernard Nwosu
Contact Phone: 732-585-4413

No: 2-030416-165927-0005
Lab: PACE Analytical Services
Lab Contact: Justin Hensley
Lab Phone: 724-850-5600

Lab #	Sample #	Sample Date	Sample Time	Analyses	Matrix	Preservative	Lab QC	Numb Cont	Container
	N002-SB011-1218-01	3/1/2016	13:46	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB011-1824-01	3/1/2016	13:49	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB011-1824-01	3/1/2016	13:49	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB011-1824-01	3/1/2016	13:49	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB011-2430-01	3/1/2016	13:53	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB011-2430-01	3/1/2016	13:53	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB011-2430-01	3/1/2016	13:53	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB011-3036-01	3/1/2016	13:55	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB011-3036-01	3/1/2016	13:55	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB011-3036-01	3/1/2016	13:55	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB011-3642-01	3/1/2016	13:57	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB011-3642-01	3/1/2016	13:57	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB011-3642-01	3/1/2016	13:57	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB011-4248-01	3/1/2016	14:00	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB011-4248-01	3/1/2016	14:00	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB011-4248-01	3/1/2016	14:00	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB012-0006-01	3/1/2016	10:30	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB012-0006-01	3/1/2016	10:30	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB012-0006-01	3/1/2016	10:30	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar

Special Instructions: Gamma Spectroscopy analysis for soil samples to include: Ra-226 (in-growth), Ra-228, K-40, Tl-208, Bi-212, Bi-214, Pb-212, Pb-214, Ra-226, Ra-228, Th-234, U-235, Pb-210, Bi-210. Email results to s.sumbaly@westonsolutions.com and ben.nwosu@westonsolutions.com

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	Bernard Nwosu RST3	3/4/16			

USEPA
DateShipped: 3/4/2016
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AirbillNo: 8022-3553-9513

CHAIN OF CUSTODY RECORD
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Contact Name: Bernard Nwosu
Contact Phone: 732-585-4413

No: 2-030416-165927-0005
Lab: PACE Analytical Services
Lab Contact: Justin Hensley
Lab Phone: 724-850-5600

Lab #	Sample #	Sample Date	Sample Time	Analyses	Matrix	Preservative	Lab QC	Numb Cont	Container
	N002-SB012-0612-01	3/1/2016	10:35	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB012-0612-01	3/1/2016	10:35	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB012-0612-01	3/1/2016	10:35	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB012-1218-01	3/1/2016	10:34	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB012-1218-01	3/1/2016	10:34	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB012-1218-01	3/1/2016	10:34	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB012-1824-01	3/1/2016	10:41	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB012-1824-01	3/1/2016	10:41	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB012-1824-01	3/1/2016	10:41	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB012-2430-01	3/1/2016	10:45	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB012-2430-01	3/1/2016	10:45	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB012-2430-01	3/1/2016	10:45	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB012-3036-01	3/1/2016	10:47	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB012-3036-01	3/1/2016	10:47	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB012-3036-01	3/1/2016	10:47	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB012-3642-01	3/1/2016	10:49	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB012-3642-01	3/1/2016	10:49	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB012-3642-01	3/1/2016	10:49	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB012-4248-01	3/1/2016	10:51	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar

Special Instructions: Gamma Spectroscopy analysis for soil samples to include: Ra-226 (in-growth), Ra-228, K-40, Tl-208, Bi-212, Bi-214, Pb-212, Pb-214, Ra-226, Ra-228, Th-234, U-235, Pb-210, Bi-210. Email results to s.sumbaly@westonsolutions.com and ben.nwosu@westonsolutions.com

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Bernard Nwosu RST3	3/4/16			

USEPA
DateShipped: 3/4/2016
CarrierName: FedEx
AirbillNo: 8022-3553-9513

CHAIN OF CUSTODY RECORD
Case #: 365
Contact Name: Bernard Nwosu
Contact Phone: 732-585-4413

No: 2-030416-165927-0005
Lab: PACE Analytical Services
Lab Contact: Justin Hensley
Lab Phone: 724-850-5600

Lab #	Sample #	Sample Date	Sample Time	Analyses	Matrix	Preservative	Lab QC	Numb Cont	Container
	N002-SB012-4248-01	3/1/2016	10:51	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB012-4248-01	3/1/2016	10:51	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB013-0006-01	3/1/2016	11:50	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB013-0006-01	3/1/2016	11:50	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB013-0006-01	3/1/2016	11:50	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB013-0612-01	3/1/2016	11:54	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB013-0612-01	3/1/2016	11:54	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB013-0612-01	3/1/2016	11:54	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB013-1218-01	3/1/2016	11:58	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB013-1218-01	3/1/2016	11:58	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB013-1218-01	3/1/2016	11:58	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB013-1824-01	3/1/2016	12:10	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB013-1824-01	3/1/2016	12:10	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB013-1824-01	3/1/2016	12:10	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB013-2430-01	3/1/2016	12:12	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB013-2430-01	3/1/2016	12:12	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB013-2430-01	3/1/2016	12:12	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB013-3036-01	3/1/2016	12:13	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB013-3036-01	3/1/2016	12:13	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar

Special Instructions: Gamma Spectroscopy analysis for soil samples to include: Ra-226 (in-growth), Ra-228, K-40, Tl-208, Bi-212, Bi-214, Pb-212, Pb-214, Ra-226, Ra-228, Th-234, U-235, Pb-210, Bi-210. Email results to s.sumbaly@westonsolutions.com and ben.nwosu@westonsolutions.com

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Bernard Nwosu AST3	3/4/16			

USEPA
DateShipped: 3/4/2016
CarrierName: FedEx
AirbillNo: 8022-3553-9513

CHAIN OF CUSTODY RECORD
Case #: 365
Contact Name: Bernard Nwosu
Contact Phone: 732-585-4413

No: 2-030416-165927-0005
Lab: PACE Analytical Services
Lab Contact: Justin Hensley
Lab Phone: 724-850-5600

Lab #	Sample #	Sample Date	Sample Time	Analyses	Matrix	Preservative	Lab QC	Numb Cont	Container
	N002-SB013-3036-01	3/1/2016	12:13	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB013-3642-01	3/1/2016	12:18	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB013-3642-01	3/1/2016	12:18	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB013-3642-01	3/1/2016	12:18	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB013-4248-01	3/1/2016	12:24	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB013-4248-01	3/1/2016	12:24	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB013-4248-01	3/1/2016	12:24	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB014-0006-01	3/2/2016	08:53	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB014-0006-01	3/2/2016	08:53	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB014-0006-01	3/2/2016	08:53	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB014-0612-01	3/2/2016	08:57	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB014-0612-01	3/2/2016	08:57	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB014-0612-01	3/2/2016	08:57	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB014-1218-01	3/2/2016	09:01	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB014-1218-01	3/2/2016	09:01	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB014-1218-01	3/2/2016	09:01	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB014-1824-01	3/2/2016	09:05	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB014-1824-01	3/2/2016	09:05	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB014-1824-01	3/2/2016	09:05	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar

Special Instructions: Gamma Spectroscopy analysis for soil samples to include: Ra-226 (in-growth), Ra-228, K-40, Tl-208, Bi-212, Bi-214, Pb-212, Pb-214, Ra-226, Ra-228, Th-234, U-235, Pb-210, Bi-210. Email results to s.sumbaly@westonsolutions.com and ben.nwosu@westonsolutions.com

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Bernard Nwosu RST3	3/4/16			

USEPA
DateShipped: 3/4/2016
CarrierName: FedEx
AirbillNo: 8022-3553-9513

CHAIN OF CUSTODY RECORD
Case #: 365
Contact Name: Bernard Nwosu
Contact Phone: 732-585-4413

No: 2-030416-165927-0005
Lab: PACE Analytical Services
Lab Contact: Justin Hensley
Lab Phone: 724-850-5600

Lab #	Sample #	Sample Date	Sample Time	Analyses	Matrix	Preservative	Lab QC	Numb Cont	Container
	N002-SB014-2430-01	3/2/2016	09:09	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB014-2430-01	3/2/2016	09:09	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB014-2430-01	3/2/2016	09:09	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB014-3036-01	3/2/2016	09:14	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB014-3036-01	3/2/2016	09:14	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB014-3036-01	3/2/2016	09:14	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB014-3642-01	3/2/2016	09:18	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB014-3642-01	3/2/2016	09:18	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB014-3642-01	3/2/2016	09:18	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	N002-SB014-4248-01	3/2/2016	09:22	Gamma Spec (Modified)	Soil	4 C	N	1	16 oz glass jar
	N002-SB014-4248-01	3/2/2016	09:22	Isotopic Thorium	Soil	4 C	N	1	8 oz glass jar
	N002-SB014-4248-01	3/2/2016	09:22	Isotopic Uranium	Soil	4 C	N	1	8 oz glass jar
	RB-N-160301	3/1/2016	16:30	Isotopic Thorium and Uranium	DI Water	HNO3 pH<2	N	1	1 L poly
	RB-N-160301	3/1/2016	16:30	Radium-226	DI Water	HNO3 pH<2	N	1	1 L poly
	RB-N-160301	3/1/2016	16:30	Radium-228	DI Water	HNO3 pH<2	N	1	1 L poly
	RB-N-160302	3/2/2016	16:30	Isotopic Thorium and Uranium	DI Water	HNO3 pH<2	N	1	1 L poly
	RB-N-160302	3/2/2016	16:30	Radium-226	DI Water	HNO3 pH<2	N	1	1 L poly
	RB-N-160302	3/2/2016	16:30	Radium-228	DI Water	HNO3 pH<2	N	1	1 L poly
	RB-N-160303	3/3/2016	08:15	Isotopic Thorium and Uranium	DI Water	HNO3 pH<2	N	1	1 L poly

Special Instructions: Gamma Spectroscopy analysis for soil samples to include: Ra-226 (in-growth), Ra-228, K-40, Tl-208, Bi-212, Bi-214, Pb-212, Pb-214, Ra-226, Ra-228, Th-234, U-235, Pb-210, Bi-210. Email results to s.sumbaly@westonsolutions.com and ben.nwosu@westonsolutions.com

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Ben Nwosu RST3	3/4/16			

USEPA
DateShipped: 3/4/2016
CarrierName: FedEx
AirbillNo: 8022-3553-9513

CHAIN OF CUSTODY RECORD
Case #: 365
Contact Name: Bernard Nwosu
Contact Phone: 732-585-4413

No: 2-030416-165927-0005
Lab: PACE Analytical Services
Lab Contact: Justin Hensley
Lab Phone: 724-850-5600

Lab #	Sample #	Sample Date	Sample Time	Analyses	Matrix	Preservative	Lab QC	Numb Cont	Container
	RB-N-160303	3/3/2016	08:15	Radium-226	DI Water	HNO3 pH<2	N	1	1 L poly
	RB-N-160303	3/3/2016	08:15	Radium-228	DI Water	HNO3 pH<2	N	1	1 L poly

Special Instructions: Gamma Spectroscopy analysis for soil samples to include: Ra-226 (in-growth), Ra-228, K-40, Tl-208, Bi-212, Bi-214, Pb-212, Pb-214, Ra-226, Ra-228, Th-234, U-235, Pb-210, Bi-210. Email results to s.sumbaly@westonsolutions.com and ben.nwosu@westonsolutions.com

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Bernard Nwosu RST3	3/4/16			

FedEx Express **NEW Package US Airbill**

FedEx Tracking Number **8022 3553 9513**

Form # 0200 — **Sender's Copy**

1 From *Please print and press hard.*

Date 3/4/16 Sender's FedEx Account Number 402356103 (USA ONLY)

Sender's Name Bernard Nwosu Phone (732) 585 4413

Company Weston Solutions, Inc Suite 201

Address 1090 King Georges Post Rd. Dept/Floor/Suite/Room

City Edison State NJ ZIP 08837

2 Your Internal Billing Reference First 24 characters will appear on invoice. 30400.021.006.2061

3 To

Recipient's Name Justin Hensley Phone (724) 850-5600

Company PACE Analytical Services

Address Suite 2,3,4 Dept/Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address 1638 Roseytown Road

Use this line for the HOLD location address or for continuation of your shipping address.

City Greensburg State PA ZIP 15601

☐ HOLD Weekday — FedEx location address REQUIRED. NOT available for FedEx First Overnight.

☐ HOLD Saturday — FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

4 Express Package Service * To most locations. NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. *For packages over 150 lbs., use the new FedEx Express Freight US Airbill.*

Next Business Day

☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

☐ FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

☑ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☑ Other

6 Special Handling and Delivery Signature Options

☐ SATURDAY Delivery — NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

☐ No Signature Required — Package may be left without obtaining a signature for delivery.

☑ Direct Signature — Someone at recipient's address may sign for delivery. Fee applies.

☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Does this shipment contain dangerous goods? One box must be checked.

☑ No ☐ Yes As per attached Shipper's Declaration ☐ Yes Shipper's Declaration not required ☐ Dry Ice Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box. ☐ Cargo Aircraft Only

7 Payment Bill to: 402356103 Enter FedEx Acct. No. or Credit Card No. below.

☐ Sender Acct. No. in Section 1 will be billed. ☐ Recipient ☑ Third Party ☐ Credit Card ☐ Cash/Check

FedEx Acct. No. / Credit Card No. Exp. Date

Total Packages: 11 Total Weight: ____ lbs. Total Declared Value†: $ ____ .00

†Our liability is limited to US$100 unless you declare a higher value. See back for details. By using the Airbill you agree to the service conditions on the back of the Airbill and in the current FedEx Service Guide, including terms that limit our liability.

644

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ATTACHMENT D

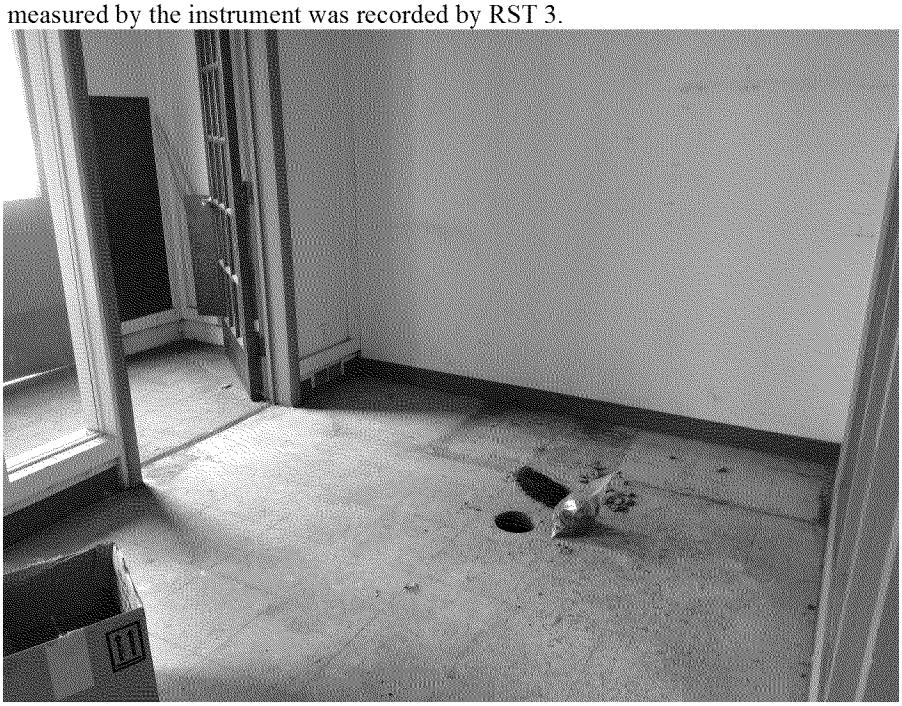
Photographic Documentation of Site Activities

Attachment D
Photographic Documentation of Site Activities
Niagara Falls Boulevard Radiological Site
Niagara Falls, New York
March 1 through 3, 2016

Photograph 1: Weston Solutions Inc., Removal Support Team 3 (RST 3) employed the services of a drilling company, SJB Services, Inc. (SJB) to advance a total of 14 soil borings in the single building located at 9540 Niagara Falls Boulevard property (Property N002), which is part of the Niagara Falls Boulevard Radiological Site (the Site). The view shows SJB utilizing a coring equipment to cut through the concrete foundation slab of the building.

Photograph 2: A view of soil sample locations N002-SB003 and N002-SB004, both in Office-3. Note the holes created by the coring equipment in order to expose subsurface soils prior to extracting soil cores with a Macro-Core®.

Photograph 3: A view of the U.S. Environmental Protection Agency (EPA) Radiation Health Physicist (RHP) collected gamma me asurements with a Ludlum-2241 and sodium iodide (NaI) scintillator at soil s ample location N002-SB-011 in Warehouse-3. At each selected sample location, gamm a measurements were collected by EPA at waist height and at contact. Th e highest instantaneous reading measured by the instrument was recorded by RST 3.



Photograph 4: A view of soil sample location N002-SB007 in Stora ge-2. This location had the highest gamma measurement collecte d with the Ludlum-2241 setup. Waist high measurement was 127,000 counts pe r minute (cpm) and contact measurement was 193,000 cpm.

Attachment D
Photographic Documentation of Site Activities
Niagara Falls Boulevard Radiological Site
Niagara Falls, New York
March 1 through 3, 2016

Photograph 5: A view of sample location N002-SB006 int Hallway-1 . Note that the 6-inch interval beneath the concrete foundation slab was suspected to contain slag material. The sample collected from this 6-in ch interval when screened with the Ludum-2241 had a gamma reading of 46,300 cpm wh ich was several times above the background level.

Photograph 6: A view of SJB utilizing a jackhammer and Macro-Co re® setup to facilitate soil sample collection by extracting soi l cores from depths 0 to 4 feet below ground surface (bgs) at each soil sample location.

Photograph 7: A view of typical soil cores extracted by utilizi ng the jackhammer and Macro-Core® setup. RST 3 collected soil samples directly from the soil cores at intervals corresponding to 0-6, 6-12, 12-18, 18-24, 24-30, 30-36, 36-42, and 42-48 inches bgs. Unutilized sections of the soil cores w ere placed back into the respective bore holes in reverse order and then filled with garden soil and bentonite.

ATTACHMENT E:

Data Validation Memo - Soil Analytical Results (Radioisotopes)

DATE: NOVEMBER 9, 2016

SUBJECT: RADIOCHEMICAL DATA VALIDATION FOR PACE ANALYTICAL SERVICES, INC. PITTSBURGH, DATA PACKAGE 30175540 IN REGARDS TO NIAGARA FALLS BOULEVARD SITE, NIAGARA COUNTY, NEW YORK, REVISION 1

FROM: RICK HAAKER; CHP, CIH, CHEMIST

RF Haacher

TO: ERIC DAly USEPA On-Scene Coordinator

BERNARD NWOSU, WESTON SOLUTIONS RST 3 SITE PROJECT MANAGER

DCN: RST3-03-F-0024, REVISION 1

ASSOCIATED TDD: TO-0006-0053

1. Overview

THIS REPORT ADDRESSes the above referenced data package that was analyzed by Pace Analytical Laboratories, of St. Louis, MO. The analytes (isotopes) and methods are provided in the following table.

Table of Isotopes and Analytical Methods.

Method	Description	Isotope
HSL-300	Alpha Spectroscopy	Thorium-228, Thorium-230, Thorium-232, U-233/234, U-235/236,Uranium-238
EPA 901.1	Gamma Spectroscopy	Bismuth-212 Lead-210,Lead-212,Potassium-40, Radium-226, Radium-228, Thallium-208, Thorium-234, Uranium-235, Cs-137
EPA 903.1	Radium-226 in Drinking Water	Radium-226
EPA 904.0	Radium-228 in Drinking Water	Radium-228

2. INTRODUCTION

THREE (3) water samples and 118 soil samples were collected during the time period March 1 and March 3, 2016. The following table provides a list of these field samples. The samples were submitted under a twenty-page long "Chain of Custody" form (No. 2-030416-165927-0005) and all samples were logged in on one "Sample Condition Upon Receipt" form. The 3,067 page long lab report package included a summary report, results, chain of custody, case narrative, and raw data. An electronic data deliverables (EDD) was provided, which contained much, but not all, raw data and results in a readily accessible format.

THE RADIO-ANALYTICAL DATA WERE VALIDATED TO MULTI-AGENCY RADIOLOGICAL LABORATORY ANALYTical Protocols Manual (MARLAP) *Chapter 8 - Radiochemical Data Verification and Validation*[1] and the requirements of the quality assurance project plan (QAPP).[2] The depth of the validation was necessarily limited because Derived Concentration Guidelines (DCGL), and some specific data performance requirements have not been designated.

DATA VALIDATION PRECAUTIONS AND LIMITATIONS

IT SHOULD BE NOTED THAT THIS TECHNICAL REPORT DESCRIBES METHOD VALIDATION AND IS NOT INTENDED TO PRovide guidance for validation of overall program/project objectives and requirements. Project validation is generally performed by project management personnel and involves a comprehensive review of all aspects (and objectives) of a sampling and analysis project.

Table of Sample IDs and Analytical Methods.

ClientID	InternalID	Matrix	Method
N002-SB001-0006-01	30175540001	SL	EPA 901.1
N002-SB001-0006-01	30175540001	SL	HSL-300
N002-SB001-0612-01	30175540002	SL	EPA 901.1
N002-SB001-0612-01	30175540002	SL	HSL-300

ClientID	InternalID	Matrix	Method
N002-SB001-1218-01	30175540003	SL	EPA 901.1
N002-SB001-1218-01	30175540003	SL	HSL-300
N002-SB001-1824-01	30175540004	SL	EPA 901.1
N002-SB001-1824-01	30175540004	SL	HSL-300

[1] Multi-Agency Radiological Laboratory Analytical Protocols Manual, Volume I, NUREG-1576, EPA 402-B-04-001A, NTIS PB2004-105421, July 2004.

[2] SITE-SPECIFIC UFP QUALITY ASSURANCE PROJECT PLAN NIAGARA FALLS BOULEVARD SITE, NIAGARA FALLS, NIAGARA COUNTY, NEW YORK, DC No.: RST3-02-D-0033, TDD No.: TO-0006-0061. AUGUST 2015.

ClientID	InternalID	Matrix	Method
N002-SB001-2430-01	30175540005	SL	EPA 901.1
N002-SB001-2430-01	30175540005	SL	HSL-300
N002-SB001-3036-01	30175540006	SL	EPA 901.1
N002-SB001-3036-01	30175540006	SL	HSL-300
N002-SB001-3642-01	30175540007	SL	EPA 901.1
N002-SB001-3642-01	30175540007	SL	HSL-300
N002-SB001-4248-01	30175540008	SL	EPA 901.1
N002-SB001-4248-01	30175540008	SL	HSL-300
N002-SB002-0006-01	30175540009	SL	EPA 901.1
N002-SB002-0006-01	30175540009	SL	HSL-300
N002-SB002-0612-01	30175540010	SL	EPA 901.1
N002-SB002-0612-01	30175540010	SL	HSL-300
N002-SB002-0612-02	30175540011	SL	EPA 901.1
N002-SB002-0612-02	30175540011	SL	HSL-300
N002-SB002-1218-01	30175540012	SL	EPA 901.1
N002-SB002-1218-01	30175540012	SL	HSL-300
N002-SB002-1824-01	30175540013	SL	EPA 901.1
N002-SB002-1824-01	30175540013	SL	HSL-300
N002-SB002-1824-02	30175540014	SL	EPA 901.1
N002-SB002-1824-02	30175540014	SL	HSL-300
N002-SB002-2430-01	30175540015	SL	EPA 901.1
N002-SB002-2430-01	30175540015	SL	HSL-300
N002-SB002-3036-01	30175540016	SL	EPA 901.1
N002-SB002-3036-01	30175540016	SL	HSL-300
N002-SB002-3036-02	30175540017	SL	EPA 901.1
N002-SB002-3036-02	30175540017	SL	HSL-300
N002-SB002-3642-01	30175540018	SL	EPA 901.1

ClientID	InternalID	Matrix	Method
N002-SB002-3642-01	30175540018	SL	HSL-300
N002-SB002-4248-01	30175540019	SL	EPA 901.1
N002-SB002-4248-01	30175540019	SL	HSL-300
N002-SB003-0006-01	30175540020	SL	EPA 901.1
N002-SB003-0006-01	30175540020	SL	HSL-300
N002-SB003-0612-01	30175540021	SL	EPA 901.1
N002-SB003-0612-01	30175540021	SL	HSL-300
N002-SB003-1218-01	30175540022	SL	EPA 901.1
N002-SB003-1218-01	30175540022	SL	HSL-300
N002-SB003-1824-01	30175540023	SL	EPA 901.1
N002-SB003-1824-01	30175540023	SL	HSL-300
N002-SB003-2430-01	30175540024	SL	EPA 901.1
N002-SB003-2430-01	30175540024	SL	HSL-300
N002-SB003-3036-01	30175540025	SL	EPA 901.1
N002-SB003-3036-01	30175540025	SL	HSL-300
N002-SB003-3642-01	30175540026	SL	EPA 901.1
N002-SB003-3642-01	30175540026	SL	HSL-300
N002-SB003-4248-01	30175540027	SL	EPA 901.1
N002-SB003-4248-01	30175540027	SL	HSL-300
N002-SB004-0006-01	30175540028	SL	EPA 901.1
N002-SB004-0006-01	30175540028	SL	HSL-300
N002-SB004-0612-01	30175540029	SL	EPA 901.1
N002-SB004-0612-01	30175540029	SL	HSL-300
N002-SB004-1218-01	30175540030	SL	EPA 901.1
N002-SB004-1218-01	30175540030	SL	HSL-300
N002-SB004-1824-01	30175540031	SL	EPA 901.1
N002-SB004-1824-01	30175540031	SL	HSL-300

ClientID	InternalID	Matrix	Method
N002-SB004-2430-01	30175540032	SL	EPA 901.1
N002-SB004-2430-01	30175540032	SL	HSL-300
N002-SB004-3036-01	30175540033	SL	EPA 901.1
N002-SB004-3036-01	30175540033	SL	HSL-300
N002-SB004-3642-01	30175540034	SL	EPA 901.1
N002-SB004-3642-01	30175540034	SL	HSL-300
N002-SB004-4248-01	30175540035	SL	EPA 901.1
N002-SB004-4248-01	30175540035	SL	HSL-300
N002-SB005-0006-01	30175540036	SL	EPA 901.1
N002-SB005-0006-01	30175540036	SL	HSL-300
N002-SB005-0612-01	30175540037	SL	EPA 901.1
N002-SB005-0612-01	30175540037	SL	HSL-300
N002-SB005-1218-01	30175540038	SL	EPA 901.1
N002-SB005-1218-01	30175540038	SL	HSL-300
N002-SB005-1824-01	30175540039	SL	EPA 901.1
N002-SB005-1824-01	30175540039	SL	HSL-300
N002-SB005-2430-01	30175540040	SL	EPA 901.1
N002-SB005-2430-01	30175540040	SL	HSL-300
N002-SB005-3036-01	30175540041	SL	EPA 901.1
N002-SB005-3036-01	30175540041	SL	HSL-300
N002-SB005-3642-01	30175540042	SL	EPA 901.1
N002-SB005-3642-01	30175540042	SL	HSL-300
N002-SB005-4248-01	30175540043	SL	EPA 901.1
N002-SB005-4248-01	30175540043	SL	HSL-300
N002-SB006-0006-01	30175540044	SL	EPA 901.1
N002-SB006-0006-01	30175540044	SL	HSL-300
N002-SB006-0612-01	30175540045	SL	EPA 901.1

ClientID	InternalID	Matrix	Method
N002-SB006-0612-01	30175540045	SL	HSL-300
N002-SB006-1218-01	30175540046	SL	EPA 901.1
N002-SB006-1218-01	30175540046	SL	HSL-300
N002-SB006-1824-01	30175540047	SL	EPA 901.1
N002-SB006-1824-01	30175540047	SL	HSL-300
N002-SB006-2430-01	30175540048	SL	EPA 901.1
N002-SB006-2430-01	30175540048	SL	HSL-300
N002-SB006-3036-01	30175540049	SL	EPA 901.1
N002-SB006-3036-01	30175540049	SL	HSL-300
N002-SB006-3642-01	30175540050	SL	EPA 901.1
N002-SB006-3642-01	30175540050	SL	HSL-300
N002-SB006-4248-01	30175540051	SL	EPA 901.1
N002-SB006-4248-01	30175540051	SL	HSL-300
N002-SB007-0006-01	30175540052	SL	EPA 901.1
N002-SB007-0006-01	30175540052	SL	HSL-300
N002-SB007-0612-01	30175540053	SL	EPA 901.1
N002-SB007-0612-01	30175540053	SL	HSL-300
N002-SB007-1218-01	30175540054	SL	EPA 901.1
N002-SB007-1218-01	30175540054	SL	HSL-300
N002-SB007-1824-01	30175540055	SL	EPA 901.1
N002-SB007-1824-01	30175540055	SL	HSL-300
N002-SB007-2430-01	30175540056	SL	EPA 901.1
N002-SB007-2430-01	30175540056	SL	HSL-300
N002-SB007-3036-01	30175540057	SL	EPA 901.1
N002-SB007-3036-01	30175540057	SL	HSL-300
N002-SB007-3642-01	30175540058	SL	EPA 901.1
N002-SB007-3642-01	30175540058	SL	HSL-300

ClientID	InternalID	Matrix	Method
N002-SB007-4248-01	30175540059	SL	EPA 901.1
N002-SB007-4248-01	30175540059	SL	HSL-300
N002-SB008-0006-01	30175540060	SL	EPA 901.1
N002-SB008-0006-01	30175540060	SL	HSL-300
N002-SB008-0612-01	30175540061	SL	EPA 901.1
N002-SB008-0612-01	30175540061	SL	HSL-300
N002-SB008-1218-01	30175540062	SL	EPA 901.1
N002-SB008-1218-01	30175540062	SL	HSL-300
N002-SB008-1824-01	30175540063	SL	EPA 901.1
N002-SB008-1824-01	30175540063	SL	HSL-300
N002-SB008-2430-01	30175540064	SL	EPA 901.1
N002-SB008-2430-01	30175540064	SL	HSL-300
N002-SB008-3036-01	30175540065	SL	EPA 901.1
N002-SB008-3036-01	30175540065	SL	HSL-300
N002-SB008-3642-01	30175540066	SL	EPA 901.1
N002-SB008-3642-01	30175540066	SL	HSL-300
N002-SB008-4248-01	30175540067	SL	EPA 901.1
N002-SB008-4248-01	30175540067	SL	HSL-300
N002-SB009-0006-01	30175540068	SL	EPA 901.1
N002-SB009-0006-01	30175540068	SL	HSL-300
N002-SB009-0612-01	30175540069	SL	EPA 901.1
N002-SB009-0612-01	30175540069	SL	HSL-300
N002-SB009-1218-01	30175540070	SL	EPA 901.1
N002-SB009-1218-01	30175540070	SL	HSL-300
N002-SB009-1824-01	30175540071	SL	EPA 901.1
N002-SB009-1824-01	30175540071	SL	HSL-300
N002-SB009-2430-01	30175540072	SL	EPA 901.1

ClientID	InternalID	Matrix	Method
N002-SB009-2430-01	30175540072	SL	HSL-300
N002-SB009-3036-01	30175540073	SL	EPA 901.1
N002-SB009-3036-01	30175540073	SL	HSL-300
N002-SB009-3642-01	30175540074	SL	EPA 901.1
N002-SB009-3642-01	30175540074	SL	HSL-300
N002-SB009-4248-01	30175540075	SL	EPA 901.1
N002-SB009-4248-01	30175540075	SL	HSL-300
N002-SB010-0006-01	30175540076	SL	EPA 901.1
N002-SB010-0006-01	30175540076	SL	HSL-300
N002-SB010-0612-01	30175540077	SL	EPA 901.1
N002-SB010-0612-01	30175540077	SL	HSL-300
N002-SB010-1218-01	30175540078	SL	EPA 901.1
N002-SB010-1218-01	30175540078	SL	HSL-300
N002-SB010-1218-02	30175540079	SL	EPA 901.1
N002-SB010-1218-02	30175540079	SL	HSL-300
N002-SB010-1824-01	30175540080	SL	EPA 901.1
N002-SB010-1824-01	30175540080	SL	HSL-300
N002-SB010-2430-01	30175540081	SL	EPA 901.1
N002-SB010-2430-01	30175540081	SL	HSL-300
N002-SB010-2430-02	30175540082	SL	EPA 901.1
N002-SB010-2430-02	30175540082	SL	HSL-300
N002-SB010-3036-01	30175540083	SL	EPA 901.1
N002-SB010-3036-01	30175540083	SL	HSL-300
N002-SB010-3642-01	30175540084	SL	EPA 901.1
N002-SB010-3642-01	30175540084	SL	HSL-300
N002-SB010-3642-02	30175540085	SL	EPA 901.1
N002-SB010-3642-02	30175540085	SL	HSL-300

ClientID	InternalID	Matrix	Method
N002-SB010-4248-01	30175540086	SL	EPA 901.1
N002-SB010-4248-01	30175540086	SL	HSL-300
N002-SB011-0006-01	30175540087	SL	EPA 901.1
N002-SB011-0006-01	30175540087	SL	HSL-300
N002-SB011-0612-01	30175540088	SL	EPA 901.1
N002-SB011-0612-01	30175540088	SL	HSL-300
N002-SB011-1218-01	30175540089	SL	EPA 901.1
N002-SB011-1218-01	30175540089	SL	HSL-300
N002-SB011-1824-01	30175540090	SL	EPA 901.1
N002-SB011-1824-01	30175540090	SL	HSL-300
N002-SB011-2430-01	30175540091	SL	EPA 901.1
N002-SB011-2430-01	30175540091	SL	HSL-300
N002-SB011-3036-01	30175540092	SL	EPA 901.1
N002-SB011-3036-01	30175540092	SL	HSL-300
N002-SB011-3642-01	30175540093	SL	EPA 901.1
N002-SB011-3642-01	30175540093	SL	HSL-300
N002-SB011-4248-01	30175540094	SL	EPA 901.1
N002-SB011-4248-01	30175540094	SL	HSL-300
N002-SB012-0006-01	30175540095	SL	EPA 901.1
N002-SB012-0006-01	30175540095	SL	HSL-300
N002-SB012-0612-01	30175540096	SL	EPA 901.1
N002-SB012-0612-01	30175540096	SL	HSL-300
N002-SB012-1218-01	30175540097	SL	EPA 901.1
N002-SB012-1218-01	30175540097	SL	HSL-300
N002-SB012-1824-01	30175540098	SL	EPA 901.1
N002-SB012-1824-01	30175540098	SL	HSL-300
N002-SB012-2430-01	30175540099	SL	EPA 901.1

ClientID	InternalID	Matrix	Method
N002-SB012-2430-01	30175540099	SL	HSL-300
N002-SB012-3036-01	30175540100	SL	EPA 901.1
N002-SB012-3036-01	30175540100	SL	HSL-300
N002-SB012-3642-01	30175540101	SL	EPA 901.1
N002-SB012-3642-01	30175540101	SL	HSL-300
N002-SB012-4248-01	30175540102	SL	EPA 901.1
N002-SB012-4248-01	30175540102	SL	HSL-300
N002-SB013-0006-01	30175540103	SL	EPA 901.1
N002-SB013-0006-01	30175540103	SL	HSL-300
N002-SB013-0612-01	30175540104	SL	EPA 901.1
N002-SB013-0612-01	30175540104	SL	HSL-300
N002-SB013-1218-01	30175540105	SL	EPA 901.1
N002-SB013-1218-01	30175540105	SL	HSL-300
N002-SB013-1824-01	30175540106	SL	EPA 901.1
N002-SB013-1824-01	30175540106	SL	HSL-300
N002-SB013-2430-01	30175540107	SL	EPA 901.1
N002-SB013-2430-01	30175540107	SL	HSL-300
N002-SB013-3036-01	30175540108	SL	EPA 901.1
N002-SB013-3036-01	30175540108	SL	HSL-300
N002-SB013-3642-01	30175540109	SL	EPA 901.1
N002-SB013-3642-01	30175540109	SL	HSL-300
N002-SB013-4248-01	30175540110	SL	EPA 901.1
N002-SB013-4248-01	30175540110	SL	HSL-300
N002-SB014-0006-01	30175540111	SL	EPA 901.1
N002-SB014-0006-01	30175540111	SL	HSL-300
N002-SB014-0612-01	30175540112	SL	EPA 901.1
N002-SB014-0612-01	30175540112	SL	HSL-300

ClientID	InternalID	Matrix	Method
N002-SB014-1218-01	30175540113	SL	EPA 901.1
N002-SB014-1218-01	30175540113	SL	HSL-300
N002-SB014-1824-01	30175540114	SL	EPA 901.1
N002-SB014-1824-01	30175540114	SL	HSL-300
N002-SB014-2430-01	30175540115	SL	EPA 901.1
N002-SB014-2430-01	30175540115	SL	HSL-300
N002-SB014-3036-01	30175540116	SL	EPA 901.1
N002-SB014-3036-01	30175540116	SL	HSL-300
N002-SB014-3642-01	30175540117	SL	EPA 901.1
N002-SB014-3642-01	30175540117	SL	HSL-300
N002-SB014-4248-01	30175540118	SL	EPA 901.1

ClientID	InternalID	Matrix	Method
N002-SB014-4248-01	30175540118	SL	HSL-300
RB-N-160301	30175540119	Water	EPA 903.1
RB-N-160301	30175540119	Water	EPA 904.0
RB-N-160301	30175540119	Water	HSL-300
RB-N-160302	30175540120	Water	EPA 903.1
RB-N-160302	30175540120	Water	EPA 904.0
RB-N-160302	30175540120	Water	HSL-300
RB-N-160303	30175540121	Water	EPA 903.1
RB-N-160303	30175540121	Water	EPA 904.0
RB-N-160303	30175540121	Water	HSL-300

3. DATA QUALIFIERS

FINAL DATA QUALIFIERS ARE CODES PLACED ON AN ANALYTICAL RESULT THAT ALERT DATA USERS TO THE VAlidator's concern about the result. These qualifiers may be summarized as U, J, R, or Q in the final validation report.

NONE THE ANALYSIS WAS PERFORMED AND RADIOACTIVITY WAS DETECTED. THE RESULT IS STATISTICAL ly positive at the 95% confidence level, above the critical level and above the MDC. The radionuclide is considered to be present in the sample.

U A normal, not detected (< critical value) result.

UJ The analyte was not detected, but the required MDA was not attained. A number of specific problems also resulted in assignment of a J qualifier where results were more uncertain than usual.

Q A reported combined standard uncertainty, which exceeds the project's required method uncertaint y. (In this report Q was only used as an intermediate or preliminary qualifier.)

J An unusually uncertain or estimated result.

R A rejected result: the problems (quantitative or qualitative) are so severe that the da ta cannot be used.

THE DATA VALIDATOR SHOULD BE AWARE THAT A DATA QUALIFIER OR A SET OF QUALIFIERS DOES NOT APPLY TO All similar data. The data validator should incorporate the project MQOs into the testing and qualifying decision-making process.

DURING THE DATA VALIDATION PROCESS THE DATA VALIDATOR MAY USE ADDITIONAL QUALIFIERS BASED ON QC SAmple results and acceptance criteria. The final validation reports should also include a summary of QC sample performance for use by the data assessor. Intermediate or preliminary qualifiers, such as 'S', 'B' or 'P' are assigned on the basis of QC sample performance and these are taken into consideration in assignment of a final qualifier to an analytical result.

J1+ A result for a sample whose associated blank contained detected activity above the critical level and the result for the sample was less than 5 times the result for the blank.

S A result with a related spike result (laboratory control sample [LCS], matrix spike [MS] or matrix spike duplicate [MSD]) that is outside the control limit for recovery (%R); S+ or S- used to indicate high or low recovery.

P A result with an associated replicate result that exceeds the control limit.

P1 A result for a particular analyte and sample that has associated with it a relati vely poorly performing pair of field replicates, which have a duplicate error ratio between 1.96 and 2.58.

PP1 A result for a particular analyte and sample that has associated with it a poorly per forming pair of field replicates, which have a duplicate error ratio greater than 2.58.

B A result with associated blank result, which is ou tside the control limit, B+ or B- used to indicate high or low results.

M An alpha spectroscopy result whose alpha spectra clearly appear to be affected by mass attenua tion resulting in loss of counts from regions of interest...

THE LOGIC FOR MAPPING PRELIMINARY DATA QUALIFIERS TO FINAL DATA QUALIFIERS IS PROVIDED IN THE following table (next page). Each sample result has only one final data qualifier, but may have several preliminary or intermediate data qualifiers. Intermediate data qualifiers are given in the following order:

- Blank Qualifier
- Spike Qualifier
- Intermediate Detection Qualifier
- Field Duplicate Qualifier
- Lab Duplicate Qualifier
- Rinse Blank Qualifier
- Tracer Recovery Qualifier

- Mass Attenuation Qualifier

Table of preliminary (intermediate) and final data qualifiers for this dataset.

Intermediate Qualifier Summary	Final Qualifier
, , , , , , , ,	
, , , , , , , M,	J
, , , , , , J, ,	J
, , , P1, , , , ,	
, , , PP1, , , , ,	
, , J, , , , , ,	J
, , J, , , , J, ,	J
, , J, PP1, , , , ,	J
, , R, , , , , ,	R
, , U, , , , , ,	U
, , U, , , , J, ,	UJ
, , U, PP1, , , , ,	U
, S-, , , , , , ,	J
, S-, , , , , J, ,	J
, S-, , P1, , , , ,	J
, S-, , P1, , , J, ,	J
J1+, , , , , , , ,	J
J1+, , , P1, , , , ,	J
J1+, , J, , , , , ,	J
J1+, , U, , , , , ,	UJ
J1+, S-, , , , , , ,	J
J1+, S-, , , , , J, ,	J

4. Equations

THE FOLLOWING EQUATIONS ARE FREQUENTLY USED TO COMPARE THE PERFORMANCE OF PAIRS OF ALIQUOTS THAT Were drawn from the same sample.

A. Duplicate error ratio

THE DUPLICATE ERROR RATIO IS THE RELATIVE ERROR IN A PAIR OF MEASUREMENTS AND TAKES INTO ACCOUNTthe measurement results, Ma and Mb, as well as the standard errors associated with the measurements, 2Sa and 2Sb.

BY CONVENTION, LABORATORIES REPORT ANALYTICAL ERRORS AS 2 TIMES THE STANDARD DEVIATION, 2 SAAnd 2 Sb. If Ma and Mb are results from duplicate aliquots that were taken from a homogeneous sample, then ninety-five percent of the time the DER is expected to be less than 1.96. Ninety-nine percent of the time it is expected to be less than 2.58.

$$DER = 2 \times \frac{|M_a - M_b|}{\sqrt{(2S_a)^2 + (2S_b)^2}}$$

B. Relative Percent Difference

THE RELATIVE PERCENT DIFFERENCE (RPCTD) is a measure of consistency of measured concentration between two aliquots of a sample.

$$RPD = 200\% \times \frac{|M_a - M_b|}{M_a + M_b}$$

C. Matrix Spike Percent Difference

$$MSPD = 100\% \times \frac{\text{Measured Spike Concentration} - \text{Unspiked Concentration}}{\text{Spike Concentration}}$$

D. Matrix Spike Normalized Difference

$$MSND = 2 \times \frac{\text{Measured Spike Concentration} - \text{Unspiked Concentration} - \text{Spike Concentration}}{\sqrt{(\text{Uncertainty of Measured Spike Concentration})^2 + (\text{Uncertainty of Unspiked Concentration})^2 + (\text{Uncertainty of Spike Concentration})^2}^{0.5}}$$

NINETY-FIVE PERCENT OF THE TIME THE ABSOLUTE VALUE OF THE MATRIX SPIKE NORMALIZED DIFFERence is expected to be less than 1.96, and ninety-nine percent of the

TIME IT SHOULD BE LESS THAN 2.58.

5. SAMPLE HANDLING AND ANALYSIS EVALUATION

THIS SECTION CONTAINS THE TECHNICAL REVIEW COMMENTS DESCRIBING THE FINDINGS AND OBSERVATIONS for each of the main verification and validation parameters described in MARLAP Chapter 8 - Radiochemical Data Verification and Validation.

A. Sample Descriptors (MARLAP 8.5.1.1)

EACH SAMPLE SHOULD HAVE A UNIQUE IDENTIFICATION CODE THAT CAN BE CROSS-REFERENCED TO A UNIQUE LABORATORY IDENTIFICATION NUMBER.

Discussion

THE LABORATORY IDENTIFICATION NUMBERS WERE CORRECTLY LISTED IN THE COVER PAGE/CASE NARRATIVE in the data package. The one laboratory data package, Pace # 30175540 includes several groups of samples/analyses that are organized by QC batch number.

B. Aliquot Size (MARLAP 8.5.1.2)

THE ALIQUOT OR SAMPLE SIZE USED FOR ANALYSIS SHOULD BE DOCUMENTED SO THAT IT CAN BE CHECKED WHEN REVIEWING CALCULATIONS, EXAMINING DILUTION FACTORS OR analyzing any data that requires aliquant as an input. It is also imperative that the appropriate unit (liter, kilogram, etc.) is assigned to the aliquant.

Discussion

THE ALIQUOT SIZE AS WELL AS ITS UNITS SHOULD BE GIVEN FOR EACH SAMPLE, AND EACH COMPONENT OF CALCULATIONS AND/OR DILUTIONS. FOR EACH ANALYSIS – RADIUM-228, Radium-226, Alpha Spectroscopy for Isotopic Uranium, Alpha Spectroscopy for Isotopic Thorium, and Gamma Spectroscopy – at least two sections provide the information on aliquot size and units. The preparation logbook most often provides the aliquot size and units in grams, which is then followed by an analysis page giving the aliquots in liters.

FOR RADIUM-228, THE PREPARATION LOGBOOK IS ON PAGE 183 OF THE DATA PACKAGE. THE ALIQUOT SIZE AND UNITS ARE GIVEN FOR THE SAMPLES AS WELL AS THE REAGENTS. THE Radium-228 analysis found on page 185 also provides the aliquot sizes and units in liters. For Radium-226, the preparation logbook can be found on page 359, which provides the aliquot units in grams. On page 361, the Radium-226 analysis gives the aliquots in liters.

FOR EACH OF THE ALPHA EMITTING ACTINIDES, ISOTOPIC URANIUM AND THORIUM, THE ALIQUOT SIZES AND UNITS ARE LISTED ON THREE DIFFERENT PAGES PER EACH ACTINIDE – preparation logbook, sample information, analysis. For isotopic Uranium, a typical portion of the preparation logbook is on page 481 of the data package, the sample information is on page 484, and the analysis is from page 485-492. For isotopic Thorium, a typical portion of the preparation logbook is on page 746; however, the aliquot unit is not directly circled and thus could be any of the four options listed above the table – g, L, F, S – but it is likely to be in grams. The sample information, on page 752, provides the aliquot size and units in liters. The aliquot size and units is also listed on the analysis pages from 753-760 of

THE DATA PACKAGE.

FOR THE LAST FORM OF ANALYSIS, GAMMA SPECTROSCOPY, THE SAMPLE AND/OR STANDARD ALIQUOT SIZES AND UNITS ARE LISTED ON THE GAMMA SPECTROSCOPY RUN LOG, PAGES 1164-1167 of the lab data package for example; however, the aliquot unit is not directly circled. The sample solid preparation logbook on pages 1160-1163 of the lab data package provides detailed information on the production process of usable samples for spectral analysis.

THE ENTIRE LAST SECTION OF THE DATA PACKAGE, PAGES 3046-3067, TITLED "STANDARDS" PROVIDES DETAILED INFORMATION ABOUT DILUTIONS AND THE CERTIFICATIONS OF standards used in the analyses. In addition, dilution calculations and records are provided for the calibration of instruments. For each dilution calculation, the aliquot size and units were listed as in accordance with MARLAP 8.5.1.2.

C. Dates of Sample Collection, Preparation, and Analysis (MARLAP 8.5.1.3)

THE ANALYTICAL DATA PACKAGE SHOULD REPORT DATE OF SAMPLING, PREPARATION, AND ANALYSIS. THESE DATA ARE USED TO CALCULATE RADIOLOGICAL HOLDING TIMES, SOME OF which may be specified in the Field Sampling Plan.

Discussion

DATA WERE PROVIDED AND THE HOLDING TIME REQUIREMENTS (I.E. <6 MONTHS) WERE MET FOR EVERY ANALYSIS IN THE DATA PACKAGE. NO ISSUES OF THIS TYPE WERE recognized and no qualifiers were assigned on that basis.

EPA METHOD 901.1 REQUIRES AN INGROWTH TIME ON THE ORDER OF 21 DAYS TO ENSURE THAT RADON-222 IS IN EQUILIBRIUM WITH RADIUM-226 BEFORE THE SAMPLE IS counted. This ingrowth time begins on the day the sample is sealed into a container and ends when the sample in counted in a gamma spectrometer. The data was not organized in a fashion that allowed the ingrowth to be easily verified. The ingrowth days were calculated for a representative sample of nine field samples from information that Pace provided in the data package. All of these samples had an ingrowth time of 21 or 22 days. No qualifiers were assigned on this basis.

D. Preservation (MARLAP 8.5.1.4)

APPROPRIATE PRESERVATION IS DEPENDENT UPON ANALYTE AND MATRIX AND SHOULD BE DEFINED IN SAMPLING AND ANALYSIS DOCUMENTATION.

Discussion

THE SAMPLE RECEIPT FORM IS ON PAGE 177 OF THE REPORT. THE DOCUMENT CONFIRMS THAT THE LABELLING AND TRANSPORT CONDITIONS (I.E. TEMPERATURE, PACKING CONTAINERS, etc.) were "ok." However, four of the samples were noted at the bottom as having either a broken lid or broken jar. All of the samples were also within a Ziploc bag. Since the Ziploc bags acted as secondary containment and the analytes of interest were non-volatile, there is not a sample integrity concern.

- Sample 040 – broken lid
- Sample 078 – broken jar in Ziploc
- Sample 094 – broken jar in Ziploc
- Sample 109 – broken jar in Ziploc

THE IDENTIFICATION NUMBERS SUCH AS THE CARRIER AND TRACKING NUMBER MATCH. OVERALL, IT APPEARS THAT the preservation conditions are consistent between the report and the QAPP. No issues of this type were noted and no sample results were assigned qualifiers on this basis.

E. Tracking (MARLAP 8.5.1.5)

EACH ANALYTICAL RESULT SHOULD BE LINKED TO THE INSTRUMENT OR DETECTOR ON WHICH IT WAS COUNTED.

Discussion

FOR RADIUM-228, THE DETECTOR ID FOR EACH SAMPLE IS GIVEN MULTIPLE TIMES. ON PAGE 187, THE ANALYSIS FOR RADIUM-228 LISTS THE DETECTOR ID (GAS FLOW Proportional Counter detector) for each sample; however, these IDs are different than the ones found on page 199 – Sodium Iodide Detector Run Logbook. On this page, the logbook shows only 4 detectors, whereas the detector IDs listed in the analysis go in to the 40s.

FOR RADIUM-226, THE SODIUM IODIDE DETECTOR RUN LOGBOOK ON PAGE 370 LISTS THE DETECTOR NUMBER USED TO ANALYZE EACH SAMPLE.

FOR ISOTOPIC URANIUM, THE ALPHA SPECTROSCOPY DETECTOR ID IS LISTED SEVERAL TIMES IN THE ALPHA SPECTRoscopy Run Logbook. Examples may be seen on pages 482-484 of the data package.

FOR ISOTOPIC THORIUM, THE (ALPHA SPECTROSCOPY) DETECTOR ID IS LISTED IN THE ALPHA SPECTROSCOPY RUN LOGBOOK (FOR EXAMPLE, SEE PAGES 748-749 OF THE DATA package), and the sample information listed on page 752.

FOR GAMMA SPECTROSCOPY ANALYSIS, THE GAMMA SPECTROSCOPY DETECTOR ID FOR EACH SAMPLE IS LISTED, FOR EXAMPLE ON PAGE 1164 TO 1167 OF THE DATA PACKAGE.

THUS NO ISSUES OF THIS TYPE WERE RECOGNIZED AND NO QUALIFIERS WERE ASSIGNED ON THIS BASIS.

F. Traceability (MARLAP 8.5.1.6)

THE TRACEABILITY OF STANDARDS AND REFERENCE MATERIALS TO BE USED DURING THE ANALYSIS SHOULD BE SPECified in the Field Sampling Plan.

Discussion

THE FIELD SAMPLING PLAN DID NOT PROVIDE SPECIFIC REQUIREMENTS FOR TRACEABILITY. HOWEVER, THERe is documentation that all radioactive standards are directly or indirectly traceable to NIST. No qualifiers were assigned on this basis.

G. QC Types and Linkages (MARLAP 8.5.1.7)

THE TYPE AND QUANTITY OF QC SAMPLES SHOULD BE IDENTIFIED AND LISTED IN THE SOW AND THE RESULTS PROVIDED BY THE LABORATORY IN A SUMMARY REPORT. REPLICATES and matrix spike results should be linked to the original sample results.

THE INFORMATION OBTAINED FROM THE ANALYSIS OF LABORATORY-GENERATED DUPLICATES IS USEFUL TO EValuate analytical variability and laboratory precision. Results from the analysis of laboratory-generated duplicate samples can also reflect the homogeneity or inhomogeneity of individual samples or groups of samples of the same matrices.

Discussion

THE QAPP DID NOT REQUIRE MATRIX SPIKE AND MATRIX SPIKE DUPLICATES FOR WATER SAMPLES. IN ADDITIONthe QAPP is ambiguous about the number of matrix spike and matrix spike duplicates that are required per QA batch.

THERE WERE BLANK, LABORATORY CONTROL STANDARD (LCS) AND DUPLICATE LCS (LCSD) AND MATRIX SPIKES/matrix spike duplicates (MS and MSD) results for each method. Matrix spikes were run for water samples, although they were not required by the QAPP.

H. Chemical Separation (Yield) (MARLAP 8.5.1.8)

YIELD ASSESSES THE EFFECTS OF THE SAMPLE MATRIX AND THE CHEMICAL SEPARATION STEPS ON THE ANAlytical result and estimates the analyte loss throughout the total analytical process.

THE EVALUATION OF AN ANALYTICAL YIELD SERVES TO EVALUATE THE EFFICIENCY OF RADIOCHEMICAL SEParations utilized when preparing samples for measurement or analysis. The use of a tracer is conducted when a known amount of a chemical tracer is added to unknown samples; during analysis, a yield or recovery of the tracer material is used to determine the efficiency of the entire analytical process. The tracer that is chosen is used because it mimics the properties of one or more target radionuclides. A tracer refers to a radioactive isotope, while a carrier is a non-radioactive substance.

Discussion

THE ANALYSES THAT EMPLOYED A TRACER OR CARRIER INCLUDE:

- EPA Method 903.1, radium-226 in drinking water by radon emanation employs both carriers and a barium-133 tracer.

- EPA Method 904, radium-228 in drinking water by gas flow proportional counting of beta emitters. The carriers employed were stable barium and yttrium. Barium-133 is used as a tracer.
- Isotopic thorium by alpha spectroscopy (thorium-234 tracer),
- Isotopic uranium by alpha spectroscopy (uranium-232 tracer).

THE QAPP DOES NOT PROVIDE ANY CHEMICAL YIELD ACCEPTANCE CRITERIA FOR WATER SAMPLES analyzed by methods EPA 903.1 and EPA 904.

THE SAMPLES LISTED IN THE FOLLOWING TABLE WERE ASSIGNED AN INTERMEDIATE QUALIFIER, 'J' (MORE UNcertain than usual) due to low or high recovery of carrier or tracer. These thorium results had a thorium-234 or uranium -232 recovery (below 30%) or high recovery (above 110%).

Table of sample results that have low tracer recoveries.

InternalID	ClientID	Method	Matrix	Isotope	Tracer Recovery %
30175540004	N002-SB001-1824-01	HSL-300	SL	Thorium-230	23
30175540004	N002-SB001-1824-01	HSL-300	SL	Thorium-232	23
30175540004	N002-SB001-1824-01	HSL-300	SL	Thorium-228	23
30175540013	N002-SB002-1824-01	HSL-300	SL	Thorium-228	25
30175540013	N002-SB002-1824-01	HSL-300	SL	Thorium-230	25
30175540013	N002-SB002-1824-01	HSL-300	SL	Thorium-232	25
30175540014	N002-SB002-1824-02	HSL-300	SL	Thorium-228	22
30175540014	N002-SB002-1824-02	HSL-300	SL	Thorium-230	22
30175540014	N002-SB002-1824-02	HSL-300	SL	Thorium-232	22
30175540020	N002-SB003-0006-01	HSL-300	SL	Thorium-228	20
30175540020	N002-SB003-0006-01	HSL-300	SL	Thorium-230	20
30175540020	N002-SB003-0006-01	HSL-300	SL	Thorium-232	20
30175540021	N002-SB003-0612-01	HSL-300	SL	Thorium-228	11
30175540021	N002-SB003-0612-01	HSL-300	SL	Thorium-230	11
30175540021	N002-SB003-0612-01	HSL-300	SL	Thorium-232	11
30175540022	N002-SB003-1218-01	HSL-300	SL	Thorium-228	25

InternalID	ClientID	Method	Matrix	Isotope	Tracer Recovery %
30175540022	N002-SB003-1218-01	HSL-300	SL	Thorium-230	25
30175540022	N002-SB003-1218-01	HSL-300	SL	Thorium-232	25
30175540023	N002-SB003-1824-01	HSL-300	SL	Thorium-230	26
30175540023	N002-SB003-1824-01	HSL-300	SL	Thorium-228	26
30175540023	N002-SB003-1824-01	HSL-300	SL	Thorium-232	26
30175540028	N002-SB004-0006-01	HSL-300	SL	Thorium-230	19
30175540028	N002-SB004-0006-01	HSL-300	SL	Thorium-232	19
30175540028	N002-SB004-0006-01	HSL-300	SL	Thorium-228	19
30175540029	N002-SB004-0612-01	HSL-300	SL	Thorium-228	14
30175540029	N002-SB004-0612-01	HSL-300	SL	Thorium-230	14
30175540029	N002-SB004-0612-01	HSL-300	SL	Thorium-232	14
30175540030	N002-SB004-1218-01	HSL-300	SL	Thorium-228	24
30175540030	N002-SB004-1218-01	HSL-300	SL	Thorium-230	24
30175540030	N002-SB004-1218-01	HSL-300	SL	Thorium-232	24
30175540036	N002-SB005-0006-01	HSL-300	SL	U-233/234	24
30175540036	N002-SB005-0006-01	HSL-300	SL	U-235/236	24
30175540036	N002-SB005-0006-01	HSL-300	SL	Uranium-238	24
30175540050	N002-SB006-3642-01	HSL-300	SL	U-233/234	111
30175540050	N002-SB006-3642-01	HSL-300	SL	U-235/236	111
30175540050	N002-SB006-3642-01	HSL-300	SL	Uranium-238	111
30175540068	N002-SB009-0006-01	HSL-300	SL	U-233/234	112
30175540068	N002-SB009-0006-01	HSL-300	SL	U-235/236	112
30175540068	N002-SB009-0006-01	HSL-300	SL	Uranium-238	112
30175540110	N002-SB013-4248-01	HSL-300	SL	Thorium-232	26
30175540110	N002-SB013-4248-01	HSL-300	SL	Thorium-228	26

InternalID	ClientID	Method	Matrix	Isotope	Tracer Recovery %
30175540110	N002-SB013-4248-01	HSL-300	SL	Thorium-230	26

I. Self-Absorption (MARLAP 8.5.1.9)

FOR SOME RADIOCHEMICAL ANALYTICAL METHODS, THE SOW MAY SPECIFY THE GENERATION OF A SELF-ABSORPTION CURVE, WHICH CORRELATES MASS OF SAMPLE DEPOSITED IN A known geometry to detector efficiency.

Discussion

THE LABORATORY PERFORMS A SELF-ABSORPTION CALIBRATION FOR RADIUM-228 (EPA METHOD 904). THERE IS NO ASPECT OF EPA METHOD 903.1 WHERE AN EXPLICIT SELF-absorption correction is necessary. EPA Method 901.1 (gamma spectroscopy) does not appear to employ a self-absorption correction, although the reference material used in the laboratory control standard (LCS, LCSD) appears to be in the same geometry and have a similar density as the regular samples, and that mitigates the need for a self-absorption correction.

ALPHA SPECTROSCOPY (HSL-300) IS VERY SENSITIVE TO SELF-ABSORPTION EFFECTS, BUT SELF-ABSORPTion problems by this analytical method become evident from peak shape and full-width at half-maximum values. Three samples appeared to exhibit self-absorption problems; these three samples were assigned an "M" qualifier. No explicit self-absorption correction was applied to HSL-300 results, the spectra either exhibit self-absorption problems or they do not.

J. Efficiency, Calibration Curves, and Instrument Background (MARLAP 8.5.1.10)

THE DETERMINATION OF DETECTOR EFFICIENCY IS A DETAILED PROCESS THAT IS BEST CHECKED DURING AN audit of the laboratory's capabilities and is usually not part of the verification and validation process.

Discussion

OVERALL THESE DATA WERE NOT ORGANIZED IN A FASHION THAT ALLOWED THEM TO BE REVIEWED IN A COMPREHENSive fashion in a reasonable amount of time. Documentation was provided in the package that the equipment used was calibrated, that backgrounds were determined, and that the efficiencies of the detectors were well determined.

A SPOT CHECK REVEALED THE FOLLOWING:

1. For Radium-228, the Gas Flow Proportional Counter detectors calibrations are described on pages 232-233. There were two counter detectors used in data analysis; Protean Detectors (11-54) and LB770 Detectors (1-10).

2. For Radium-226, the calibration description is on pages 404-405. The detector system used for Radium-226 was a combination of a Lucas cell, an alpha scintillation detector, and a Cal bubbler.
3. There is no direct calibration section regarding the Sodium Iodide detector; however, the routine check evidence begins on page 463 of the report. This section is to demonstrate the consistency of each detector.
4. For the isotopic actinides, Uranium and Thorium, the alpha spectroscopy calibration is described on pages 1072-1073. Not all of the DETECTORS WERE CALIBRATED DUE TO THEM BEING OFFLINE.
5. The gamma spectroscopy calibration is described on page 2988; however, the entire section beginning on page 2982 provides detailed data on the calibration process.

THE LABORATORY DATA PACKAGE QA NARRATIVES DID NOT IDENTIFY ANY DEFICIENCIES RELATED TO CALIBRATION Curves, efficiency and instrument backgrounds.

K. Spectrometry Resolution (MARLAP 8.5.1.11)

THE MEASURED RESOLUTION OF ALPHA AND GAMMA SPECTROMETERS, AND SPECTRAL INFORMATION SHOULD BE PROVIDED IN THE DATA PACKAGE TO EVALUATE IF PROPER PEAK identification and separation was made.

Discussion

FWHM DATA ARE PROVIDED FOR THE ALPHA SPECTROSCOPY RESULTS, BUT THE ALGORITHM THAT ORTEC USES to calculate this statistic do not appear to be a reliable indicator. In addition there are no established alpha spectra resolution requirements in the QAPP.

INSTEAD, EACH ALPHA SPECTRUM WAS VIEWED AND THOSE WHERE THE ALPHA ENERGY PEAKS WERE BADLY SMEARED OUT OF THEIR REGIONS OF INTEREST WERE FLAGGED. THE following thorium analyses had excessive peak broadening and were assigned an intermediate data qualifier of 'M.'

Table of sample analyses that exhibited resolution/self-absorption effects.

Batch	Method	InternalID	ClientID
RADC28437	HSL-300	30175540036	N002-SB005-0006-01
RADC28437	HSL-300	30175540044	N002-SB006-0006-01
RADC28437	HSL-300	30175540052	N002-SB007-0006-01

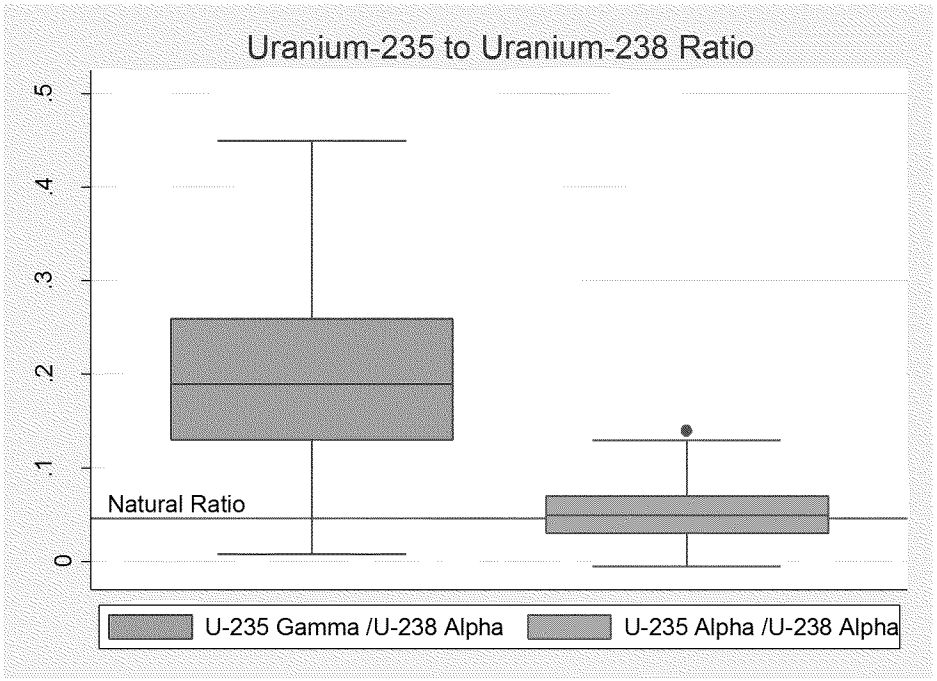
VIEWING THESE PARTICULAR ALPHA SPECTRA, ONE IS LEFT WITH THE IMPRESSION THAT THE SAMPLES WERE affected by mass absorption of the emitted alpha particles. This might arise either from excessive mass deposited on the surface of the sample disk or too much airpressure inside the counting chamber.

THERE ARE NO ESTABLISHED ACCEPTANCE CRITERIA FOR ALPHA SPECTROMETER RESOLUTION IN THE QAPP.

FWHM DATA FOR GAMMA SPECTROSCOPY RESULTS ARE WITHIN 0.5%, WHICH MEETS THE REQUIREMENTS OF THE QAPP. IN ADDITION, THE LABORATORY NARRATIVES DID NOT identify any issues related to spectrometer resolution.

IT IS NOTABLE THAT BOTH URANIUM-235 AND RADIUM-226 HAVE GAMMA EMISSIONS AT 186 KEV AND THE SPECTROMETER RESOLUTION WAS INSUFFICIENT TO AVOID PROBLEMS. The result was a severe positive bias in the reported concentrations of uranium-235 by method EPA 901.1.The bias is evident from comparison of the box and whisker plots of the ratio of uranium-235 by gamma spectroscopy to uranium-238 by alpha spectroscopy and the ratio of uranium-235 by alpha spectroscopy to uranium-238 by alpha spectroscopy. The median of the empirical uranium-235 to uranium-238 ratio based on alpha spectroscopy agrees much more closely with the naturally occurring isotopic ratio and the interquartile range (the box on the right) is much narrower. As a consequence, all uranium-235 results reported by EPA 901.1 were rejected (i.e. assigned a data qualifier of 'R').This is a common difficulty with using gamma spectroscopy to estimate uranium-235 concentrations in environmental samples that also contain radium-226.

Box and Whisker Plots of Sample U-235 to U-238 Ratios.



NO OTHER ISSUES WITH MISSING SPECTRA OR SPECTRAL RESOLUTION WERE RECOGNIZED AND NO OTHER QUALifiers were assigned on this basis.

L. Dilution and Correction Factors (MARLAP 8.5.1.12)

SAMPLES FOR RADIOCHEMISTRY ARE USUALLY NOT DILUTED. IF REQUIRED, DILUTION AND CORRECTION FACTORS (i.e., dry weight correction, ash weight correction) should be provided in the data package so that the final calculations of all data affected by dilution factors can be recalculated and confirmed.

Discussion

The entire last section of the report, pages 3046-3067, titled "Standards" provides detailed information about dilutions and the certifications of standards used in the analyses. In addition, dilution calculations and records are provided for the calibration of instruments. For each dilution calculation, the aliquot size and units were listed as in accordance with MARLAP 8.5.1.2.

NO ISSUES WITH THESE FACTORS WERE RECOGNIZED AND NO QUALIFIERS WERE ASSIGNED ON THIS BASIS.

M. Counts and Count Time (Duration) (MARLAP 8.5.1.13)

THE COUNT TIME FOR EACH SAMPLE, QC ANALYSIS, AND INSTRUMENT BACKGROUND SHOULD BE RECORDED IN THE DATA PACKAGE. THE ABILITY TO DETECT RADIONUCLIDES IS directly related to the count time.

Discussion

COUNT TIMES, QC ANALYSES, AND BACKGROUNDS ARE DOCUMENTED IN THE DATA PACKAGE. COUNT TIMES WERE NEARLY ALWAYS SUFFICIENT FOR RESULTS TO HAVE THE REQUIRED MDC. No issues with missing data of these types were recognized.

N. Result of Measurement, Uncertainty, Minimum Detectable Concentration, and Units (MARLAP 8.5.1.14)

THE RESULT OF EACH MEASUREMENT, ITS EXPANDED MEASUREMENT UNCERTAINTY, AND THE ESTIMATED SAMPLE- OR ANALYTE-SPECIFIC MDC SHOULD BE REPORTED FOR EACH sample in the appropriate units.

Discussion

NO ISSUES WITH THESE FACTORS WERE RECOGNIZED AND NO QUALIFIERS WERE ASSIGNED ON THIS BASIS.

THREE ISOTOPES THAT WERE REQUESTED BY GAMMA SPECTROSCOPY REQUIRE DISCUSSION: BISMUTH-210, LEAD-210 and uranium-235. Bismuth-210 is a pure beta emitter, so it cannot be determined by gamma spectroscopy.

Lead-210 emits a low-energy 46 keVgamma ray with a low (4%) abundance. It can be detected by gamma spectroscopy at relatively low levels provided that the sample geometry is optimized for low energy gamma emitters and there are not elevated concentrations of other gamma emitting isotopes in the sample. If lead-210 is a contaminant of concern, then it is preferable to quantify it by measurement of its daughter, polonium-210 by alpha spectroscopy using method HSL-300. The detection limit for lead-210 by EPA Method 901.1 is not low enough that good risk-based decisions can always be made concerning clean-up.

URANIUM-235 WAS ESTIMATED BY GAMMA SPECTROSCOPY BY EPA METHOD 901.1 AND DETERMINED BY HSL-300 (ALPHA SPECTROSCOPY). THE GAMMA SPECTROSCOPY method relied on measuring the intensity of a 186 KeV gamma emission. Radium-226 is also present in the samples and it also has a 186 KeV gamma emission that interferes with the determination of uranium-235 by gamma spectroscopy. This has the effect of making EPA Method 901.1 decidedly unreliable for quantifying uranium-235 in many circumstances.

6. QUALITY CONTROL SAMPLES TECHNICAL REVIEW

A. Method Blanks (MARLAP 8.5.2.1)

THE REQUIREMENT FOR A METHOD BLANK IS USUALLY ESTABLISHED IN THE SOW AND APPROPRIATE PLAN DOCUMENTS. CHECK TO SEE IF A METHOD BLANK WAS ANALYZED AND NO detected concentration/activity found in the results.

Discussion

METHOD BLANK RESULTS WERE PROVIDED FOR EVERY ANALYTE IN THE DATA PACKAGE.

ACTIVITY WAS DETECTED IN METHOD BLANKS FOR SOIL AND LIQUID AS NOTED BELOW. AN INTERMEDIATE QUALIfier value of 'J' means that the analyte was detected above the critical level in the method blank. If no intermediate qualifier value is provided for a method blank, then the analyte of interest was detected above the minimum detectable concentration MDC.

THE ANALYTES OF INTEREST ARE ALL NATURALLY OCCURRING, SO IT IS POSSIBLE THAT ACTIVITY may be present in blanks through no fault of the analytical laboratory. Clearly it is desirable for there to be no activity in the blanks wherever possible.

Table of method blanks having detected activity in excess of the nominal critical level.

InternalID	Matrix	Batch	Method	Isotope	Result	Report Units	Intermediate Detect Qualifier
1040187	SL	RADC28396	EPA 901.1	Radium-226	0.227	pCi/g	J,
1040187	SL	RADC28396	EPA 901.1	Thallium-208	0.061	pCi/g	J,
1040188	SL	RADC28397	EPA 901.1	Radium-226	0.093	pCi/g	J,
1040188	SL	RADC28397	EPA 901.1	Thallium-208	0.073	pCi/g	J,

InternalID	Matrix	Batch	Method	Isotope	Result	Report Units	Intermediate Detect Qualifier
1040190	SL	RADC28398	EPA 901.1	Thallium-208	0.093	pCi/g	
1040196	SL	RADC28399	EPA 901.1	Radium-226	0.127	pCi/g	J,
1040196	SL	RADC28399	EPA 901.1	Radium-228	0.178	pCi/g	J,
1040210	SL	RADC28400	EPA 901.1	Cesium-137	0.058	pCi/g	
1040833	SL	RADC28435	HSL-300	Thorium-228	0.183	pCi/g	
1040833	SL	RADC28435	HSL-300	U-233/234	0.05	pCi/g	J,
1040833	SL	RADC28435	HSL-300	U-235/236	0.025	pCi/g	J,
1040838	SL	RADC28436	HSL-300	Thorium-230	0.016	pCi/g	J,
1040838	SL	RADC28436	HSL-300	U-233/234	0.06	pCi/g	J,
1040838	SL	RADC28436	HSL-300	U-235/236	0.029	pCi/g	J,
1040838	SL	RADC28436	HSL-300	Uranium-238	0.017	pCi/g	J,
1040839	SL	RADC28437	HSL-300	Thorium-228	0.142	pCi/g	J,
1040839	SL	RADC28437	HSL-300	U-233/234	0.059	pCi/g	J,
1040842	SL	RADC28438	HSL-300	Thorium-228	0.273	pCi/g	
1040843	SL	RADC28439	HSL-300	Thorium-228	0.253	pCi/g	
1040843	SL	RADC28439	HSL-300	U-233/234	0.13	pCi/g	
1040843	SL	RADC28439	HSL-300	Uranium-238	0.077	pCi/g	J,
1040850	SL	RADC28440	HSL-300	Thorium-228	0.152	pCi/g	J,
1040850	SL	RADC28440	HSL-300	U-233/234	0.059	pCi/g	J,
1040866	SL	RADC28441	HSL-300	Thorium-228	0.098	pCi/g	J,
1042592	SL	RADC28509	EPA 901.1	Radium-226	0.082	pCi/g	J,
1043489	SL	RADC28514	EPA 901.1	Radium-226	0.218	pCi/g	J,
1043489	SL	RADC28514	EPA 901.1	Thallium-208	0.042	pCi/g	J,
1045652	Water	RADC28554	HSL-300	U-233/234	0.127	pCi/L	J,
1049103	SL	RADC28662	EPA 901.1	Bismuth-212	0.882	pCi/g	J,
1049103	SL	RADC28662	EPA 901.1	Radium-226	0.257	pCi/g	J,

B. Laboratory Control Samples (MARLAP 8.5.2.2)

LABORATORY CONTROL SAMPLES (LCS) AND LCS DUPLICATES (LCSD) WERE RUN FOR EACH BATCH AND ANALYSIS TYPE, AND ALL SPIKE RECOVERY AND TRACER RECOVERY RESULTS for LCS samples were acceptable, based on QAPP requirements.

AN EXTENDED ELECTRONIC DATA DELIVERABLE INDICATED THAT THERE WERE DISCORDANT DUPLICATE ERROR ratio results for batch RADC28841 for both uranium-238 and uranium-234, yielding a DER value of about 3.75. Samples would normally be rejected if the DER exceeded 2.58. The discrepant member of the pair (or one with the same InternalID) was run (or re-run) the next day and the analyte results and tracer recovery results were close to the expected value (See pages 729 and 731 of the laboratory data package).

Table showing agreement of Laboratory Control Samples with Their Duplicates.

Method	Batch	Matrix	LCS	LCS Dup	Isotope	DER
HSL-300	RADC28441	SL	LCS28441	LCSD28441	U-233/234	3.74
HSL-300	RADC28441	SL	LCS28441	LCSD28441	Uranium-238	3.64
HSL-300	RADC28426	Water	LCS28426	LCSD28426	Thorium-230	1.67
EPA 901.1	RADC28399	SL	LCS28399	LCSD28399	Lead-210	1.19
EPA 903.1	RADC28407	Water	LCS28407	LCSD28407	Radium-226	0.89
HSL-300	RADC28437	SL	LCS28437	LCSD28437	Thorium-230	0.86
HSL-300	RADC28436	SL	LCS28436	LCSD28436	U-233/234	0.84
HSL-300	RADC28438	SL	LCS28438	LCSD28438	Thorium-230	0.79
HSL-300	RADC28435	SL	LCS28435	LCSD28435	U-233/234	0.77
HSL-300	RADC28437	SL	LCS28437	LCSD28437	Uranium-238	0.77
HSL-300	RADC28439	SL	LCS28439	LCSD28439	Thorium-230	0.74
HSL-300	RADC28440	SL	LCS28440	LCSD28440	Uranium-238	0.72
EPA 901.1	RADC28514	SL	LCS28514	LCSD28514	Cesium-137	0.71
HSL-300	RADC28440	SL	LCS28440	LCSD28440	U-233/234	0.7
HSL-300	RADC28436	SL	LCS28436	LCSD28436	Uranium-238	0.68
EPA 901.1	RADC28400	SL	LCS28400	LCSD28400	Cobalt-60	0.66
EPA 901.1	RADC28514	SL	LCS28514	LCSD28514	Cobalt-60	0.61
EPA 904.0	RADC28414	Water	LCS28414	LCSD28414	Radium-228	0.6

Method	Batch	Matrix	LCS	LCS Dup	Isotope	DER
EPA 901.1	RADC28400	SL	LCS28400	LCSD28400	Cesium-137	0.59
EPA 901.1	RADC28399	SL	LCS28399	LCSD28399	Cobalt-60	0.56
EPA 901.1	RADC28398	SL	LCS28398	LCSD28398	Cobalt-60	0.56
EPA 901.1	RADC28396	SL	LCS28396	LCSD28396	Cesium-137	0.54
EPA 901.1	RADC28397	SL	LCS28397	LCSD28397	Cesium-137	0.51
EPA 901.1	RADC28509	SL	LCS28509	LCSD28509	Lead-210	0.51
EPA 901.1	RADC28396	SL	LCS28396	LCSD28396	Cobalt-60	0.51
EPA 901.1	RADC28392	SL	LCS28392	LCSD28392	Cobalt-60	0.48
EPA 901.1	RADC28662	SL	LCS28662	LCSD28662	Cesium-137	0.48
EPA 901.1	RADC28398	SL	LCS28398	LCSD28398	Lead-210	0.47
EPA 901.1	RADC28399	SL	LCS28399	LCSD28399	Cesium-137	0.45
EPA 901.1	RADC28397	SL	LCS28397	LCSD28397	Cobalt-60	0.43
EPA 901.1	RADC28400	SL	LCS28400	LCSD28400	Lead-210	0.42
EPA 901.1	RADC28392	SL	LCS28392	LCSD28392	Cesium-137	0.42
EPA 901.1	RADC28392	SL	LCS28392	LCSD28392	Lead-210	0.36
HSL-300	RADC28554	Water	LCS28554	LCSD28554	Uranium-238	0.35
HSL-300	RADC28437	SL	LCS28437	LCSD28437	U-233/234	0.34
HSL-300	RADC28438	SL	LCS28438	LCSD28438	U-233/234	0.34
HSL-300	RADC28439	SL	LCS28439	LCSD28439	U-233/234	0.32
HSL-300	RADC28440	SL	LCS28440	LCSD28440	Thorium-230	0.3
HSL-300	RADC28554	Water	LCS28554	LCSD28554	U-233/234	0.29
EPA 901.1	RADC28398	SL	LCS28398	LCSD28398	Cesium-137	0.27
EPA 901.1	RADC28396	SL	LCS28396	LCSD28396	Lead-210	0.25
HSL-300	RADC28438	SL	LCS28438	LCSD28438	Uranium-238	0.23
EPA 901.1	RADC28514	SL	LCS28514	LCSD28514	Lead-210	0.21
EPA 901.1	RADC28509	SL	LCS28509	LCSD28509	Cobalt-60	0.14
EPA 901.1	RADC28509	SL	LCS28509	LCSD28509	Cesium-137	0.12

Method	Batch	Matrix	LCS	LCS Dup	Isotope	DER
HSL-300	RADC28435	SL	LCS28435	LCSD28435	Uranium-238	0.09
HSL-300	RADC28441	SL	LCS28441	LCSD28441	Thorium-230	0.08
EPA 901.1	RADC28662	SL	LCS28662	LCSD28662	Cobalt-60	0.07
HSL-300	RADC28436	SL	LCS28436	LCSD28436	Thorium-230	0.06
EPA 901.1	RADC28397	SL	LCS28397	LCSD28397	Lead-210	0.05
HSL-300	RADC28439	SL	LCS28439	LCSD28439	Uranium-238	0.02
EPA 901.1	RADC28662	SL	LCS28662	LCSD28662	Lead-210	0

THE QAPP DOES NOT PROVIDE DIRECTION ON HOW TO QUALIFY FIELD SAMPLES ASSOCIATED WITH LCS SAMPLESthat fail a QAPP requirement, if the LCS sample is subsequently re-analyzed and passes. In the absence of specific requirements in the QAPP on this matter, all LCS sample resultsand their duplicates were satisfactory and no qualifiers were assigned on this basis

C. Laboratory Replicates (MARLAP 8.5.2.3)

THE OBJECTIVE OF REPLICATE ANALYSES IS TO MEASURE LABORATORY PRECISION BASED ON EACH SAMPLE MATRIX. CHECK TO SEE IF LABORATORY REPLICATE WAS ANALYZED AND within control limits.

Discussion

LABORATORY REPLICATES IN THIS DATA PACKAGE WERE OF PRINCIPALLY TWO TYPES, LAB CONTROL STANDARDS and matrix spikes. Ordinary samples *per se* were not ever treated as replicates. There were field replicates, matrix spike duplicates (MS, MSD) and laboratory control standard duplicates (LCS, LCSD) however.

THE SATISFACTORY PERFORMANCE OF LCS AND LCSD SAMPLES WAS ADDRESSED IN SECTION B, "LABORATORY Control Samples (MARLAP 8.5.2.2)." Lab replicates exhibited reasonable Duplicate Error Ratios (DER), with all DERs being less than 1.96. No qualifiers were assigned on the basis of laboratory replicate performance.

THE PERFORMANCE OF MATRIX SPIKES AND THEIR DUPLICATES ARE ADDRESSED IN SECTION D "MATRIX SPIkes and Matrix Spike Duplicates (MARLAP 8.5.2.4). These are a type of laboratory replicate that is produced by adding a known amount of natural uranium or thorium-230 reference material to replicate aliquots of a regular field sample. All of the MS – MSD sample pairs had satisfactory agreement. No qualifiers were assigned on the basis of discordant results for MS – MSD replicate pairs.

D. Matrix Spikes and Matrix Spike Duplicates (MARLAP 8.5.2.4)

MATRIX SPIKE SAMPLES PROVIDE INFORMATION ABOUT THE EFFECT OF EACH SAMPLE MATRIX ON THE PREPARATion and measurement methodology. The test uncovers the possible existence of recovery problems, based on either a statistical test or a specified fixed control limit.

Discussion

THERE APPEARS TO BE A REQUIREMENT FOR MATRIX SPIKES AND MATRIX SPIKE DUPLICATES IN THE QAPP Worksheets #28E (Isotopic Uranium) and #28F (Isotopic Thorium), but the QAPP does not say "one pair per batch" or provide further direction.

MATRIX SPIKES OR MATRIX SPIKE DUPLICATES WERE NOT REQUIRED BY THE QAPP FOR WATER SAMPLES. NO QUalifiers were assigned on this basis.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SAMPLES WERE NOT PREPARED FROM REPRESENTATIVE SOIL SAmples for analysis by gamma spectroscopy. It is not customary to produce matrix spikes and matrix spike duplicates for this method and I have never seen any lab do it. No qualifiers were assigned on this basis.

MATRIX SPIKES AND MATRIX SPIKE DUPLICATE RESULTS WERE PROVIDED FOR SOIL SAMPLES ANALYZED For thorium-230, uranium-238 and U-233/234, but not for every QA batch analyzed, as indicated in the following table.

Matrix spikes and Matrix Spike Duplicates were not provided for these QA batches.

Method	Batch	Isotope
HSL-300	RADC28426	Thorium-230
HSL-300	RADC28437	Thorium-230
HSL-300	RADC28437	Uranium-238 and -234
HSL-300	RADC28438	Thorium-230
HSL-300	RADC28438	Uranium-238 and -234
HSL-300	RADC28440	Thorium-230
HSL-300	RADC28440	Uranium-238 and -234
HSL-300	RADC28441	Thorium-230
HSL-300	RADC28441	Uranium-238 and -234
HSL-300	RADC28554	Uranium-238 and -234

THE FOLLOWING TABLE ADDRESSES THE AGREEMENT BETWEEN THE MS AND MSD REPLICATE PAIRS. DUPLICATE ERRor ratios (DER) are expected to be less than 1.96 about 95% and less than 2.58 about 99% of the time if random error were the only source of disagreement between replicate pairs of results. Relative percent differences were all acceptable, being well below the rejection criteria of 40%.

Matrix spikes and Matrix Spike Duplicates were not provided for theses QA batches.

Batch	MSD Internal ID	MS Internal ID	Matrix	Isotope	R%D	DER
RADC28435	30175540123	30175540122	SL	U-233/234	12.67	1.08
RADC28435	30175540123	30175540122	SL	Uranium-238	8.04	0.69
RADC28435	30175540125	30175540124	SL	U-233/234	15.15	1.29
RADC28435	30175540125	30175540124	SL	Uranium-238	18.18	1.54
RADC28436	30175540127	30175540126	SL	Thorium-230	11.66	0.85
RADC28436	30175540127	30175540126	SL	U-233/234	14.39	1.19
RADC28436	30175540127	30175540126	SL	Uranium-238	3.39	0.28
RADC28439	30175540129	30175540128	SL	Thorium-230	4.31	0.32
RADC28439	30175540129	30175540128	SL	U-233/234	8.16	0.67
RADC28439	30175540129	30175540128	SL	Uranium-238	3.6	0.3
RADC28439	30175540131	30175540130	SL	Thorium-230	3.88	0.31
RADC28439	30175540131	30175540130	SL	U-233/234	2.6	0.22
RADC28439	30175540131	30175540130	SL	Uranium-238	4.15	0.35
RADC28439	30175540133	30175540132	SL	Thorium-230	17.62	1.31
RADC28439	30175540133	30175540132	SL	U-233/234	7.16	0.61
RADC28439	30175540133	30175540132	SL	Uranium-238	6.79	0.58

SPIKE RECOVERY PERCENTAGES AND MATRIX SPIKE NORMALIZED DIFFERENCES ARE PROVIDED IN THE FOLLOWing table. Thorium analyses in batch RADC28439 exhibited a higher than expected matrix spike normalized difference (2.13 and 2.65). All thorium-228, thorium-230 and thorium-232 results in this batch were qualified with an intermediate qualifier of S-.

Table summarizing matrix spike performance.

Spike Sample ID	Sample ID	Isotope	Method	Batch	Units	Matrix Spike Normalized Difference	Spike Recovery (%)
30175540122	30175540012	U-235/236	HSL-300	RADC28435	pCi/g	0.8	100
30175540122	30175540012	Uranium-238	HSL-300	RADC28435	pCi/g	0.01	100
30175540123	30175540012	U-235/236	HSL-300	RADC28435	pCi/g	-0.83	87
30175540123	30175540012	Uranium-238	HSL-300	RADC28435	pCi/g	-1.11	91
30175540124	30175540015	U-235/236	HSL-300	RADC28435	pCi/g	1.69	111
30175540124	30175540015	Uranium-238	HSL-300	RADC28435	pCi/g	0.83	108
30175540125	30175540015	U-235/236	HSL-300	RADC28435	pCi/g	0.1	95
30175540125	30175540015	Uranium-238	HSL-300	RADC28435	pCi/g	-1.22	90
30175540126	30175540018	Thorium-230	HSL-300	RADC28436	pCi/g	-1.58	85
30175540126	30175540018	U-235/236	HSL-300	RADC28436	pCi/g	0.31	96
30175540126	30175540018	Uranium-238	HSL-300	RADC28436	pCi/g	0.65	107
30175540127	30175540018	Thorium-230	HSL-300	RADC28436	pCi/g	-0.63	93
30175540127	30175540018	U-235/236	HSL-300	RADC28436	pCi/g	1.43	107
30175540127	30175540018	Uranium-238	HSL-300	RADC28436	pCi/g	-0.12	99
30175540128	30175540080	Thorium-230	HSL-300	RADC28439	pCi/g	-1.64	84
30175540128	30175540080	U-235/236	HSL-300	RADC28439	pCi/g	1.27	107
30175540128	30175540080	Uranium-238	HSL-300	RADC28439	pCi/g	0.14	101
30175540129	30175540080	Thorium-230	HSL-300	RADC28439	pCi/g	-2.13	81
30175540129	30175540080	U-235/236	HSL-300	RADC28439	pCi/g	0.49	99
30175540129	30175540080	Uranium-238	HSL-300	RADC28439	pCi/g	-0.22	98
30175540130	30175540080	Thorium-230	HSL-300	RADC28439	pCi/g	-1.39	88
30175540130	30175540083	U-235/236	HSL-300	RADC28439	pCi/g	0.56	100
30175540130	30175540083	Uranium-238	HSL-300	RADC28439	pCi/g	0.15	101

Spike Sample ID	Sample ID	Isotope	Method	Batch	Units	Matrix Spike Normalized Difference	Spike Recovery (%)
30175540131	30175540080	Thorium-230	HSL-300	RADC28439	pCi/g	-1.92	84
30175540131	30175540083	U-235/236	HSL-300	RADC28439	pCi/g	0.74	102
30175540131	30175540083	Uranium-238	HSL-300	RADC28439	pCi/g	-0.46	96
30175540132	30175540080	Thorium-230	HSL-300	RADC28439	pCi/g	-2.65	77
30175540132	30175540086	U-235/236	HSL-300	RADC28439	pCi/g	-0.55	92
30175540132	30175540086	Uranium-238	HSL-300	RADC28439	pCi/g	-0.63	95
30175540133	30175540080	Thorium-230	HSL-300	RADC28439	pCi/g	-0.52	94
30175540133	30175540086	U-235/236	HSL-300	RADC28439	pCi/g	0.36	99
30175540133	30175540086	Uranium-238	HSL-300	RADC28439	pCi/g	0.3	103

E. Field Replicate Sample Performance

FIELD REPLICATES OR DUPLICATES ARE GIVEN IN THE FOLLOWING TABLE.

Table of field duplicate samples.

Method	Matrix	Client ID 1	Client ID 2	Internal ID 1	Internal ID 2	Batch
EPA 901.1	SL	N002-SB002-0612-01	N002-SB002-0612-02	30175540010	30175540011	RADC28392
HSL-300	SL	N002-SB002-0612-01	N002-SB002-0612-02	30175540010	30175540011	RADC28435
EPA 901.1	SL	N002-SB002-1824-01	N002-SB002-1824-02	30175540013	30175540014	RADC28392
HSL-300	SL	N002-SB002-1824-01	N002-SB002-1824-02	30175540013	30175540014	RADC28435
EPA 901.1	SL	N002-SB002-3036-01	N002-SB002-3036-02	30175540016	30175540017	RADC28396
HSL-300	SL	N002-SB002-3036-01	N002-SB002-3036-02	30175540016	30175540017	RADC28435
EPA 901.1	SL	N002-SB010-1218-01	N002-SB010-1218-02	30175540078	30175540079	RADC28398
HSL-300	SL	N002-SB010-1218-01	N002-SB010-1218-02	30175540078	30175540079	RADC28439
EPA 901.1	SL	N002-SB010-2430-01	N002-SB010-2430-02	30175540081	30175540082	RADC28399

Method	Matrix	Client ID 1	Client ID 2	Internal ID 1	Internal ID 2	Batch
HSL-300	SL	N002-SB010-2430-01	N002-SB010-2430-02	30175540081	30175540082	RADC28439
EPA 901.1	SL	N002-SB010-3642-01	N002-SB010-3642-02	30175540084	30175540085	RADC28399
HSL-300	SL	N002-SB010-3642-01	N002-SB010-3642-02	30175540084	30175540085	RADC28439

NO CRITERIA FOR FIELD DUPLICATES ARE GIVEN IN THE QAPP OTHER THAN WORKSHEET 35, WHICH STATEs "Compare results of field duplicate (or replicate) analyses with RPD criteria." No duplicate error ratio performance requirement is provided.

THE RELATIVE PERCENT DIFFERENCES (R%D) WERE CALCULATED FOR THE FIELD DUPLICATE PAirs of samples. This statistic potentially can provide indications of the uniformity of the analyte in the media sampled. High values of relative percent difference greater than 40% suggest that the distribution of contaminants in the media sampled might be relatively heterogeneous. However duplicate error ratios were less than 1.96, and that suggests there might not be significant differences in the replicate results once the standard errors of the results are also taken intoconsideration. The more discordant field duplicates are provided in the table below.

Table of relatively discrepant field replicate results.

Batch	Method	ClientID1	ClientID2	Isotope	Rel Diff %	DER
RADC28399	EPA 901.1	N002-SB010-2430-01	N002-SB010-2430-02	Potassium-40	32.05	2.05
RADC28392	EPA 901.1	N002-SB002-0612-01	N002-SB002-0612-02	Radium-226	33.86	2.06
RADC28435	HSL-300	N002-SB002-1824-01	N002-SB002-1824-02	Thorium-230	95.69	2.26
RADC28398	EPA 901.1	N002-SB010-1218-01	N002-SB010-1218-02	Thallium-208	66.84	2.29
RADC28399	EPA 901.1	N002-SB010-3642-01	N002-SB010-3642-02	Bismuth-212	158.14	3.49

No final data qualifiers were assigned to regular samples / analytes associated with these field duplicate QA sample pair results, although the results that are associated with the field replicate samples carry an intermediate qualifier of 'P1' or 'PP1.'

F. Rinse Blank Sample Performance

RINSE BLANK DUPLICATE PERFORMANCE WAS ADDRESSED ALONG WITH OTHER LABORATORY REPLICATES in a previous section. Rinse blanks with activity reported in excess of the nominal critical level are provided in the following table. Concentrations (Conc), the uncertainty at 2 standard deviations (2 S) and nominal critical level are all in units of pCi/L.

THE SAMPLES OF PRIMARY INTEREST IN THIS INVESTIGATION ARE SOIL SAMPLES. THE POTENTIAL presence of a small amount of activity in the rinse blanks that were assigned an intermediate qualifier of "J" does not imply that cross-contamination between soil samples occurred to a degree that is likely to compromise the validity of the soil sample results. No qualifiers were assigned to soil sample results on the basis of rinse blank results.

Table of analytical results for rinse blanks.

Internal ID	Client ID	Method	Isotope	Conc	2 S	MDA	Nominal Critical Level	Intermediate Qualifier
30175540119	RB-N-160301	HSL-300	U-233/234	0.131	0.13	0.171	0.0368	J,
30175540119	RB-N-160301	HSL-300	Uranium-238	0.051	0.104	0.144	0.026	J,
30175540120	RB-N-160302	HSL-300	U-233/234	0.048	0.085	0.171	0.0425	J,
30175540121	RB-N-160303	HSL-300	U-233/234	0.034	0.085	0.147	0.0329	J,
30175540119	RB-N-160301	EPA 903.1	Radium-226	0.0555	0.253	0.408	0.13	U,
30175540119	RB-N-160301	EPA 904.0	Radium-228	-0.036	0.299	0.708	0.255	U,
30175540119	RB-N-160301	HSL-300	Thorium-228	0.024	0.102	0.203	0.0815	U,
30175540119	RB-N-160301	HSL-300	Thorium-230	0.007	0.042	0.053	0.012	U,
30175540119	RB-N-160301	HSL-300	Thorium-232	0	0.042	0.027	0.0135	U,
30175540119	RB-N-160301	HSL-300	U-235/236	-0.009	0.135	0.188	0.0339	U,
30175540120	RB-N-160302	EPA 903.1	Radium-226	0.115	0.263	0.424	0.134	U,
30175540120	RB-N-160302	EPA 904.0	Radium-228	-0.0863	0.32	0.767	0.277	U,
30175540120	RB-N-160302	HSL-300	Thorium-228	0.011	0.063	0.131	0.0503	U,
30175540120	RB-N-160302	HSL-300	Thorium-230	-0.001	0.035	0.078	0.0261	U,
30175540120	RB-N-160302	HSL-300	Thorium-232	0	0.035	0.022	0.011	U,
30175540120	RB-N-160302	HSL-300	U-235/236	-0.007	0.111	0.154	0.0277	U,
30175540120	RB-N-160302	HSL-300	Uranium-238	0.018	0.085	0.118	0.0212	U,
30175540121	RB-N-160303	EPA 903.1	Radium-226	-0.057	0.26	0.612	0.23	U,
30175540121	RB-N-160303	EPA 904.0	Radium-228	-0.199	0.253	0.65	0.232	U,
30175540121	RB-N-160303	HSL-300	Thorium-228	-0.01	0.074	0.199	0.0601	U,
30175540121	RB-N-160303	HSL-300	Thorium-230	0.019	0.073	0.053	0.0265	U,

Internal ID	Client ID	Method	Isotope	Conc	2 S	MDA	Nominal Critical Level	Intermediate Qualifier
30175540121	RB-N-160303	HSL-300	Thorium-232	0	0.073	0.053	0.0265	U,
30175540121	RB-N-160303	HSL-300	U-235/236	0.031	0.111	0.084	0.042	U,
30175540121	RB-N-160303	HSL-300	Uranium-238	0.024	0.085	0.064	0.032	U,

7. TEST OF DETECTION AND UNUSUAL UNCERTAINTY EVALUATION

A. Detection (MARLAP 8.5.3.1)

DETECTION QUALIFIERS WERE ASSIGNED FOLLOWING THE RATIONALE DESCRIBED IN SECTION 3.

Discussion

THE FOLLOWING FIELD SAMPLES CARRY AN INTERMEDIATE QUALIFIER.

Table of 755 field sample results that carry a data qualifier.

Client ID	Internal ID	Matrix	Method	Isotope	Intermediate Qualifier	Final Qualifier
N002-SB001-0006-01	30175540001	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB001-0006-01	30175540001	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB001-0006-01	30175540001	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB001-0006-01	30175540001	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB001-0006-01	30175540001	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB001-0006-01	30175540001	SL	HSL-300	Thorium-228	, S-, , , , , , ,	J
N002-SB001-0006-01	30175540001	SL	HSL-300	Thorium-230	, S-, , P1, , , , ,	J
N002-SB001-0006-01	30175540001	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB001-0612-01	30175540002	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB001-0612-01	30175540002	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB001-0612-01	30175540002	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB001-0612-01	30175540002	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB001-0612-01	30175540002	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB001-0612-01	30175540002	SL	HSL-300	Thorium-228	, S-, , , , , , ,	J
N002-SB001-0612-01	30175540002	SL	HSL-300	Thorium-230	, S-, , P1, , , , ,	J
N002-SB001-0612-01	30175540002	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB001-0612-01	30175540002	SL	HSL-300	U-235/236	J1+, , , , , , , ,	J
N002-SB001-1218-01	30175540003	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB001-1218-01	30175540003	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB001-1218-01	30175540003	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB001-1218-01	30175540003	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB001-1218-01	30175540003	SL	HSL-300	Thorium-228	J1+, S-, , , , , , ,	J
N002-SB001-1218-01	30175540003	SL	HSL-300	Thorium-230	, S-, , P1, , , , ,	J
N002-SB001-1218-01	30175540003	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB001-1218-01	30175540003	SL	HSL-300	U-235/236	J1+, , J, , , , , ,	J
N002-SB001-1824-01	30175540004	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB001-1824-01	30175540004	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB001-1824-01	30175540004	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB001-1824-01	30175540004	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB001-1824-01	30175540004	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB001-1824-01	30175540004	SL	HSL-300	Thorium-228	, S-, , , , , J, ,	J
N002-SB001-1824-01	30175540004	SL	HSL-300	Thorium-230	, S-, , P1, , , J, ,	J
N002-SB001-1824-01	30175540004	SL	HSL-300	Thorium-232	, S-, , , , , J, ,	J
N002-SB001-1824-01	30175540004	SL	HSL-300	U-235/236	J1+, , U, , , , , ,	UJ
N002-SB001-2430-01	30175540005	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB001-2430-01	30175540005	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB001-2430-01	30175540005	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB001-2430-01	30175540005	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB001-2430-01	30175540005	SL	HSL-300	Thorium-228	, S-, , , , , , ,	J
N002-SB001-2430-01	30175540005	SL	HSL-300	Thorium-230	, S-, , P1, , , , ,	J
N002-SB001-2430-01	30175540005	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB001-3036-01	30175540006	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB001-3036-01	30175540006	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB001-3036-01	30175540006	SL	EPA 901.1	Lead-210	, , J, , , , , ,	J

Client ID	Internal ID	Matrix	Method	Isotope	Intermediate Qualifier	Final Qualifier
N002-SB001-3036-01	30175540006	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB001-3036-01	30175540006	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB001-3036-01	30175540006	SL	HSL-300	Thorium-228	, S-, , , , , , ,	J
N002-SB001-3036-01	30175540006	SL	HSL-300	Thorium-230	, S-, , P1, , , , ,	J
N002-SB001-3036-01	30175540006	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB001-3036-01	30175540006	SL	HSL-300	U-235/236	J1+, , , , , , , ,	J
N002-SB001-3642-01	30175540007	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB001-3642-01	30175540007	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB001-3642-01	30175540007	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB001-3642-01	30175540007	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB001-3642-01	30175540007	SL	HSL-300	Thorium-228	, S-, , , , , , ,	J
N002-SB001-3642-01	30175540007	SL	HSL-300	Thorium-230	, S-, , P1, , , , ,	J
N002-SB001-3642-01	30175540007	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB001-3642-01	30175540007	SL	HSL-300	U-235/236	J1+, , U, , , , , ,	UJ
N002-SB001-4248-01	30175540008	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB001-4248-01	30175540008	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB001-4248-01	30175540008	SL	EPA 901.1	Lead-210	, , J, , , , , ,	J
N002-SB001-4248-01	30175540008	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB001-4248-01	30175540008	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB001-4248-01	30175540008	SL	HSL-300	Thorium-228	, S-, , , , , , ,	J
N002-SB001-4248-01	30175540008	SL	HSL-300	Thorium-230	, S-, , P1, , , , ,	J
N002-SB001-4248-01	30175540008	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB001-4248-01	30175540008	SL	HSL-300	U-235/236	J1+, , , , , , , ,	J
N002-SB002-0006-01	30175540009	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB002-0006-01	30175540009	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB002-0006-01	30175540009	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB002-0006-01	30175540009	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB002-0006-01	30175540009	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB002-0006-01	30175540009	SL	HSL-300	Thorium-228	, S-, , , , , , ,	J
N002-SB002-0006-01	30175540009	SL	HSL-300	Thorium-230	, S-, , P1, , , , ,	J
N002-SB002-0006-01	30175540009	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB002-0006-01	30175540009	SL	HSL-300	U-235/236	J1+, , J, , , , , ,	J
N002-SB002-0612-01	30175540010	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB002-0612-01	30175540010	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB002-0612-01	30175540010	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB002-0612-01	30175540010	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB002-0612-01	30175540010	SL	HSL-300	Thorium-228	J1+, S-, , , , , , ,	J
N002-SB002-0612-01	30175540010	SL	HSL-300	Thorium-230	, S-, , P1, , , , ,	J
N002-SB002-0612-01	30175540010	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB002-0612-01	30175540010	SL	HSL-300	U-235/236	J1+, , J, , , , , ,	J
N002-SB002-0612-02	30175540011	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB002-0612-02	30175540011	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB002-0612-02	30175540011	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB002-0612-02	30175540011	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB002-0612-02	30175540011	SL	HSL-300	Thorium-228	, S-, , , , , , ,	J

Client ID	Internal ID	Matrix	Method	Isotope	Intermediate Qualifier	Final Qualifier
N002-SB002-0612-02	30175540011	SL	HSL-300	Thorium-230	, S-, , P1, , , , ,	J
N002-SB002-0612-02	30175540011	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB002-0612-02	30175540011	SL	HSL-300	U-235/236	J1+, , , , , , , ,	J
N002-SB002-1218-01	30175540012	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB002-1218-01	30175540012	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB002-1218-01	30175540012	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB002-1218-01	30175540012	SL	HSL-300	Thorium-228	, S-, , , , , , ,	J
N002-SB002-1218-01	30175540012	SL	HSL-300	Thorium-230	, S-, , P1, , , , ,	J
N002-SB002-1218-01	30175540012	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB002-1218-01	30175540012	SL	HSL-300	U-235/236	J1+, , U, , , , , ,	UJ
N002-SB002-1824-01	30175540013	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB002-1824-01	30175540013	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB002-1824-01	30175540013	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB002-1824-01	30175540013	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB002-1824-01	30175540013	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB002-1824-01	30175540013	SL	HSL-300	Thorium-228	J1+, S-, , , , , J, ,	J
N002-SB002-1824-01	30175540013	SL	HSL-300	Thorium-230	, S-, , P1, , , J, ,	J
N002-SB002-1824-01	30175540013	SL	HSL-300	Thorium-232	, S-, , , , , J, ,	J
N002-SB002-1824-01	30175540013	SL	HSL-300	U-235/236	J1+, , J, , , , , ,	J
N002-SB002-1824-02	30175540014	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB002-1824-02	30175540014	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB002-1824-02	30175540014	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB002-1824-02	30175540014	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB002-1824-02	30175540014	SL	HSL-300	Thorium-228	, S-, , , , , J, ,	J
N002-SB002-1824-02	30175540014	SL	HSL-300	Thorium-230	, S-, , P1, , , J, ,	J
N002-SB002-1824-02	30175540014	SL	HSL-300	Thorium-232	, S-, , , , , J, ,	J
N002-SB002-1824-02	30175540014	SL	HSL-300	U-235/236	J1+, , , , , , , ,	J
N002-SB002-2430-01	30175540015	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB002-2430-01	30175540015	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB002-2430-01	30175540015	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB002-2430-01	30175540015	SL	HSL-300	Thorium-228	, S-, , , , , , ,	J
N002-SB002-2430-01	30175540015	SL	HSL-300	Thorium-230	, S-, , P1, , , , ,	J
N002-SB002-2430-01	30175540015	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB002-2430-01	30175540015	SL	HSL-300	U-235/236	J1+, , J, , , , , ,	J
N002-SB002-3036-01	30175540016	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB002-3036-01	30175540016	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB002-3036-01	30175540016	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB002-3036-01	30175540016	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB002-3036-01	30175540016	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB002-3036-01	30175540016	SL	HSL-300	Thorium-228	, S-, , , , , , ,	J
N002-SB002-3036-01	30175540016	SL	HSL-300	Thorium-230	, S-, , P1, , , , ,	J
N002-SB002-3036-01	30175540016	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB002-3036-01	30175540016	SL	HSL-300	U-235/236	J1+, , , , , , , ,	J
N002-SB002-3036-02	30175540017	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB002-3036-02	30175540017	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U

Client ID	Internal ID	Matrix	Method	Isotope	Intermediate Qualifier	Final Qualifier
N002-SB002-3036-02	30175540017	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB002-3036-02	30175540017	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB002-3036-02	30175540017	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB002-3642-01	30175540018	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB002-3642-01	30175540018	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB002-3642-01	30175540018	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB002-3642-01	30175540018	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB002-3642-01	30175540018	SL	HSL-300	U-235/236	J1+, , U, , , , , ,	UJ
N002-SB002-4248-01	30175540019	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB002-4248-01	30175540019	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB002-4248-01	30175540019	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB002-4248-01	30175540019	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB002-4248-01	30175540019	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB002-4248-01	30175540019	SL	HSL-300	U-235/236	J1+, , J, , , , , ,	J
N002-SB003-0006-01	30175540020	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB003-0006-01	30175540020	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB003-0006-01	30175540020	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB003-0006-01	30175540020	SL	HSL-300	Thorium-228	, , , , , , J, ,	J
N002-SB003-0006-01	30175540020	SL	HSL-300	Thorium-230	, , , , , , J, ,	J
N002-SB003-0006-01	30175540020	SL	HSL-300	Thorium-232	, , , , , , J, ,	J
N002-SB003-0612-01	30175540021	SL	EPA 901.1	Cesium-137	, , J, , , , , ,	J
N002-SB003-0612-01	30175540021	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB003-0612-01	30175540021	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB003-0612-01	30175540021	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB003-0612-01	30175540021	SL	HSL-300	Thorium-228	, , , , , , J, ,	J
N002-SB003-0612-01	30175540021	SL	HSL-300	Thorium-230	, , , , , , J, ,	J
N002-SB003-0612-01	30175540021	SL	HSL-300	Thorium-232	, , , , , , J, ,	J
N002-SB003-0612-01	30175540021	SL	HSL-300	U-235/236	J1+, , , , , , , ,	J
N002-SB003-1218-01	30175540022	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB003-1218-01	30175540022	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB003-1218-01	30175540022	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB003-1218-01	30175540022	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB003-1218-01	30175540022	SL	HSL-300	Thorium-228	, , , , , , J, ,	J
N002-SB003-1218-01	30175540022	SL	HSL-300	Thorium-230	, , , , , , J, ,	J
N002-SB003-1218-01	30175540022	SL	HSL-300	Thorium-232	, , , , , , J, ,	J
N002-SB003-1824-01	30175540023	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB003-1824-01	30175540023	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB003-1824-01	30175540023	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB003-1824-01	30175540023	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB003-1824-01	30175540023	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB003-1824-01	30175540023	SL	HSL-300	Thorium-228	, , , , , , J, ,	J
N002-SB003-1824-01	30175540023	SL	HSL-300	Thorium-230	, , , , , , J, ,	J
N002-SB003-1824-01	30175540023	SL	HSL-300	Thorium-232	, , , , , , J, ,	J
N002-SB003-1824-01	30175540023	SL	HSL-300	U-235/236	J1+, , J, , , , , ,	J
N002-SB003-2430-01	30175540024	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U

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N002-SB003-2430-01	30175540024	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB003-2430-01	30175540024	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB003-2430-01	30175540024	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB003-2430-01	30175540024	SL	HSL-300	U-235/236	J1+, , J, , , , , ,	J
N002-SB003-3036-01	30175540025	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB003-3036-01	30175540025	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB003-3036-01	30175540025	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB003-3036-01	30175540025	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB003-3036-01	30175540025	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB003-3036-01	30175540025	SL	HSL-300	U-235/236	J1+, , J, , , , , ,	J
N002-SB003-3642-01	30175540026	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB003-3642-01	30175540026	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB003-3642-01	30175540026	SL	EPA 901.1	Radium-228	, , J, , , , , ,	J
N002-SB003-3642-01	30175540026	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB003-3642-01	30175540026	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB003-3642-01	30175540026	SL	HSL-300	U-235/236	J1+, , J, , , , , ,	J
N002-SB003-4248-01	30175540027	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB003-4248-01	30175540027	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB003-4248-01	30175540027	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB003-4248-01	30175540027	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB003-4248-01	30175540027	SL	HSL-300	U-235/236	J1+, , U, , , , , ,	UJ
N002-SB004-0006-01	30175540028	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB004-0006-01	30175540028	SL	EPA 901.1	Potassium-40	, , U, , , , , ,	U
N002-SB004-0006-01	30175540028	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB004-0006-01	30175540028	SL	HSL-300	Thorium-228	, , , , , , J, ,	J
N002-SB004-0006-01	30175540028	SL	HSL-300	Thorium-230	, , , , , , J, ,	J
N002-SB004-0006-01	30175540028	SL	HSL-300	Thorium-232	, , , , , , J, ,	J
N002-SB004-0612-01	30175540029	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB004-0612-01	30175540029	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB004-0612-01	30175540029	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB004-0612-01	30175540029	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB004-0612-01	30175540029	SL	HSL-300	Thorium-228	, , , , , , J, ,	J
N002-SB004-0612-01	30175540029	SL	HSL-300	Thorium-230	, , , , , , J, ,	J
N002-SB004-0612-01	30175540029	SL	HSL-300	Thorium-232	, , , , , , J, ,	J
N002-SB004-0612-01	30175540029	SL	HSL-300	U-235/236	J1+, , , , , , , ,	J
N002-SB004-1218-01	30175540030	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB004-1218-01	30175540030	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB004-1218-01	30175540030	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB004-1218-01	30175540030	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB004-1218-01	30175540030	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB004-1218-01	30175540030	SL	HSL-300	Thorium-228	, , , , , , J, ,	J
N002-SB004-1218-01	30175540030	SL	HSL-300	Thorium-230	, , , , , , J, ,	J
N002-SB004-1218-01	30175540030	SL	HSL-300	Thorium-232	, , , , , , J, ,	J
N002-SB004-1218-01	30175540030	SL	HSL-300	U-235/236	J1+, , , , , , , ,	J
N002-SB004-1824-01	30175540031	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J

Client ID	Internal ID	Matrix	Method	Isotope	Intermediate Qualifier	Final Qualifier
N002-SB004-1824-01	30175540031	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB004-1824-01	30175540031	SL	EPA 901.1	Lead-210	, , J, , , , , ,	J
N002-SB004-1824-01	30175540031	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB004-1824-01	30175540031	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB004-1824-01	30175540031	SL	HSL-300	U-235/236	J1+, , , , , , , ,	J
N002-SB004-2430-01	30175540032	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB004-2430-01	30175540032	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB004-2430-01	30175540032	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB004-2430-01	30175540032	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB004-2430-01	30175540032	SL	HSL-300	U-235/236	J1+, , J, , , , , ,	J
N002-SB004-3036-01	30175540033	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB004-3036-01	30175540033	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB004-3036-01	30175540033	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB004-3036-01	30175540033	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB004-3036-01	30175540033	SL	HSL-300	U-235/236	J1+, , , , , , , ,	J
N002-SB004-3642-01	30175540034	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB004-3642-01	30175540034	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB004-3642-01	30175540034	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB004-3642-01	30175540034	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB004-3642-01	30175540034	SL	HSL-300	U-235/236	J1+, , , , , , , ,	J
N002-SB004-4248-01	30175540035	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB004-4248-01	30175540035	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB004-4248-01	30175540035	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB004-4248-01	30175540035	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB004-4248-01	30175540035	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB005-0006-01	30175540036	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB005-0006-01	30175540036	SL	EPA 901.1	Lead-210	, , J, , , , , ,	J
N002-SB005-0006-01	30175540036	SL	EPA 901.1	Potassium-40	, , J, , , , , ,	J
N002-SB005-0006-01	30175540036	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB005-0006-01	30175540036	SL	HSL-300	Thorium-228	, , , , , , , M,	J
N002-SB005-0006-01	30175540036	SL	HSL-300	Thorium-230	, , , , , , , M,	J
N002-SB005-0006-01	30175540036	SL	HSL-300	Thorium-232	, , , , , , , M,	J
N002-SB005-0006-01	30175540036	SL	HSL-300	U-233/234	, , , , , , J, ,	J
N002-SB005-0006-01	30175540036	SL	HSL-300	U-235/236	, , , , , , J, ,	J
N002-SB005-0006-01	30175540036	SL	HSL-300	Uranium-238	, , , , , , J, ,	J
N002-SB005-0612-01	30175540037	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB005-0612-01	30175540037	SL	EPA 901.1	Lead-210	, , J, , , , , ,	J
N002-SB005-0612-01	30175540037	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB005-0612-01	30175540037	SL	HSL-300	U-235/236	, , U, , , , , ,	U
N002-SB005-1218-01	30175540038	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB005-1218-01	30175540038	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB005-1218-01	30175540038	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB005-1218-01	30175540038	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB005-1218-01	30175540038	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB005-1824-01	30175540039	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J

Client ID	Internal ID	Matrix	Method	Isotope	Intermediate Qualifier	Final Qualifier
N002-SB005-1824-01	30175540039	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB005-1824-01	30175540039	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB005-1824-01	30175540039	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB005-1824-01	30175540039	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB005-1824-01	30175540039	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB005-2430-01	30175540040	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB005-2430-01	30175540040	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB005-2430-01	30175540040	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB005-2430-01	30175540040	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB005-3036-01	30175540041	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB005-3036-01	30175540041	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB005-3036-01	30175540041	SL	EPA 901.1	Lead-210	, , J, , , , , ,	J
N002-SB005-3036-01	30175540041	SL	EPA 901.1	Thallium-208	J1+, , , , , , , ,	J
N002-SB005-3036-01	30175540041	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB005-3036-01	30175540041	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB005-3036-01	30175540041	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB005-3642-01	30175540042	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB005-3642-01	30175540042	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB005-3642-01	30175540042	SL	EPA 901.1	Thallium-208	J1+, , , , , , , ,	J
N002-SB005-3642-01	30175540042	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB005-3642-01	30175540042	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB005-4248-01	30175540043	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB005-4248-01	30175540043	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB005-4248-01	30175540043	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB005-4248-01	30175540043	SL	HSL-300	U-235/236	, , U, , , , , ,	U
N002-SB006-0006-01	30175540044	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB006-0006-01	30175540044	SL	EPA 901.1	Lead-210	, , J, , , , , ,	J
N002-SB006-0006-01	30175540044	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB006-0006-01	30175540044	SL	HSL-300	Thorium-228	, , , , , , , , M,	J
N002-SB006-0006-01	30175540044	SL	HSL-300	Thorium-230	, , , , , , , , M,	J
N002-SB006-0006-01	30175540044	SL	HSL-300	Thorium-232	, , , , , , , , M,	J
N002-SB006-0612-01	30175540045	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB006-0612-01	30175540045	SL	EPA 901.1	Cesium-137	, , J, , , , , ,	J
N002-SB006-0612-01	30175540045	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB006-0612-01	30175540045	SL	EPA 901.1	Thallium-208	J1+, , , , , , , ,	J
N002-SB006-0612-01	30175540045	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB006-0612-01	30175540045	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB006-1218-01	30175540046	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB006-1218-01	30175540046	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB006-1218-01	30175540046	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB006-1218-01	30175540046	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB006-1824-01	30175540047	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB006-1824-01	30175540047	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB006-1824-01	30175540047	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB006-1824-01	30175540047	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U

Client ID	Internal ID	Matrix	Method	Isotope	Intermediate Qualifier	Final Qualifier
N002-SB006-1824-01	30175540047	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB006-1824-01	30175540047	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB006-2430-01	30175540048	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB006-2430-01	30175540048	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB006-2430-01	30175540048	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB006-2430-01	30175540048	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB006-2430-01	30175540048	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB006-2430-01	30175540048	SL	HSL-300	U-235/236	, , U, , , , , ,	U
N002-SB006-3036-01	30175540049	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB006-3036-01	30175540049	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB006-3036-01	30175540049	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB006-3036-01	30175540049	SL	EPA 901.1	Thallium-208	J1+, , , , , , , , ,	J
N002-SB006-3036-01	30175540049	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB006-3036-01	30175540049	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB006-3036-01	30175540049	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB006-3642-01	30175540050	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB006-3642-01	30175540050	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB006-3642-01	30175540050	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB006-3642-01	30175540050	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB006-3642-01	30175540050	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB006-3642-01	30175540050	SL	HSL-300	U-233/234	, , , , , , J, ,	J
N002-SB006-3642-01	30175540050	SL	HSL-300	U-235/236	, , U, , , , J, ,	UJ
N002-SB006-3642-01	30175540050	SL	HSL-300	Uranium-238	, , , , , , J, ,	J
N002-SB006-4248-01	30175540051	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB006-4248-01	30175540051	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB006-4248-01	30175540051	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB006-4248-01	30175540051	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB006-4248-01	30175540051	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB007-0006-01	30175540052	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB007-0006-01	30175540052	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB007-0006-01	30175540052	SL	HSL-300	Thorium-228	, , , , , , , M,	J
N002-SB007-0006-01	30175540052	SL	HSL-300	Thorium-230	, , , , , , , M,	J
N002-SB007-0006-01	30175540052	SL	HSL-300	Thorium-232	, , , , , , , M,	J
N002-SB007-0612-01	30175540053	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB007-0612-01	30175540053	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB007-0612-01	30175540053	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB007-0612-01	30175540053	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB007-1218-01	30175540054	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB007-1218-01	30175540054	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB007-1218-01	30175540054	SL	EPA 901.1	Lead-210	, , J, , , , , ,	J
N002-SB007-1218-01	30175540054	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB007-1218-01	30175540054	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB007-1824-01	30175540055	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB007-1824-01	30175540055	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB007-1824-01	30175540055	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U

Client ID	Internal ID	Matrix	Method	Isotope	Intermediate Qualifier	Final Qualifier
N002-SB007-1824-01	30175540055	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB007-1824-01	30175540055	SL	HSL-300	Thorium-228	J1+, , , , , , , ,	J
N002-SB007-2430-01	30175540056	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB007-2430-01	30175540056	SL	EPA 901.1	Cesium-137	, , J, , , , , ,	J
N002-SB007-2430-01	30175540056	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB007-2430-01	30175540056	SL	EPA 901.1	Thallium-208	J1+, , , , , , , ,	J
N002-SB007-2430-01	30175540056	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB007-2430-01	30175540056	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB007-3036-01	30175540057	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB007-3036-01	30175540057	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB007-3036-01	30175540057	SL	EPA 901.1	Lead-210	, , J, , , , , ,	J
N002-SB007-3036-01	30175540057	SL	EPA 901.1	Thallium-208	J1+, , , , , , , ,	J
N002-SB007-3036-01	30175540057	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB007-3036-01	30175540057	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB007-3036-01	30175540057	SL	HSL-300	Thorium-228	J1+, , , , , , , ,	J
N002-SB007-3036-01	30175540057	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB007-3642-01	30175540058	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB007-3642-01	30175540058	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB007-3642-01	30175540058	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB007-3642-01	30175540058	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB007-3642-01	30175540058	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB007-3642-01	30175540058	SL	HSL-300	Thorium-228	J1+, , , , , , , ,	J
N002-SB007-3642-01	30175540058	SL	HSL-300	U-235/236	, , U, , , , , ,	U
N002-SB007-4248-01	30175540059	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB007-4248-01	30175540059	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB007-4248-01	30175540059	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB007-4248-01	30175540059	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB007-4248-01	30175540059	SL	HSL-300	Thorium-228	J1+, , , , , , , ,	J
N002-SB007-4248-01	30175540059	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB008-0006-01	30175540060	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB008-0006-01	30175540060	SL	EPA 901.1	Lead-210	, , J, , , , , ,	J
N002-SB008-0006-01	30175540060	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB008-0006-01	30175540060	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB008-0612-01	30175540061	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB008-0612-01	30175540061	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB008-0612-01	30175540061	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB008-0612-01	30175540061	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB008-1218-01	30175540062	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB008-1218-01	30175540062	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB008-1218-01	30175540062	SL	EPA 901.1	Lead-210	, , J, , , , , ,	J
N002-SB008-1218-01	30175540062	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB008-1218-01	30175540062	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB008-1218-01	30175540062	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB008-1824-01	30175540063	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB008-1824-01	30175540063	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U

Client ID	Internal ID	Matrix	Method	Isotope	Intermediate Qualifier	Final Qualifier
N002-SB008-1824-01	30175540063	SL	EPA 901.1	Lead-210	, , J, , , , , ,	J
N002-SB008-1824-01	30175540063	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB008-1824-01	30175540063	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB008-1824-01	30175540063	SL	HSL-300	U-235/236	, , U, , , , , ,	U
N002-SB008-2430-01	30175540064	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB008-2430-01	30175540064	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB008-2430-01	30175540064	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB008-2430-01	30175540064	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB008-2430-01	30175540064	SL	HSL-300	Thorium-228	J1+, , , , , , , ,	J
N002-SB008-2430-01	30175540064	SL	HSL-300	U-235/236	, , U, , , , , ,	U
N002-SB008-3036-01	30175540065	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB008-3036-01	30175540065	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB008-3036-01	30175540065	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB008-3036-01	30175540065	SL	EPA 901.1	Thallium-208	J1+, , , P1, , , , ,	J
N002-SB008-3036-01	30175540065	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB008-3036-01	30175540065	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB008-3036-01	30175540065	SL	HSL-300	Thorium-228	J1+, , , , , , , ,	J
N002-SB008-3036-01	30175540065	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB008-3642-01	30175540066	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB008-3642-01	30175540066	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB008-3642-01	30175540066	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB008-3642-01	30175540066	SL	EPA 901.1	Thallium-208	J1+, , , P1, , , , ,	J
N002-SB008-3642-01	30175540066	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB008-3642-01	30175540066	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB008-3642-01	30175540066	SL	HSL-300	Thorium-228	J1+, , , , , , , ,	J
N002-SB008-3642-01	30175540066	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB008-4248-01	30175540067	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB008-4248-01	30175540067	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB008-4248-01	30175540067	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB008-4248-01	30175540067	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB008-4248-01	30175540067	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB008-4248-01	30175540067	SL	HSL-300	Thorium-228	J1+, , , , , , , ,	J
N002-SB009-0006-01	30175540068	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB009-0006-01	30175540068	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB009-0006-01	30175540068	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB009-0006-01	30175540068	SL	HSL-300	U-233/234	, , , , , , J, ,	J
N002-SB009-0006-01	30175540068	SL	HSL-300	U-235/236	, , , , , , J, ,	J
N002-SB009-0006-01	30175540068	SL	HSL-300	Uranium-238	, , , , , , J, ,	J
N002-SB009-0612-01	30175540069	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB009-0612-01	30175540069	SL	EPA 901.1	Lead-210	, , J, , , , , ,	J
N002-SB009-0612-01	30175540069	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB009-1218-01	30175540070	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB009-1218-01	30175540070	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB009-1218-01	30175540070	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB009-1218-01	30175540070	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U

Client ID	Internal ID	Matrix	Method	Isotope	Intermediate Qualifier	Final Qualifier
N002-SB009-1218-01	30175540070	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB009-1218-01	30175540070	SL	HSL-300	Thorium-228	J1+, , , , , , , ,	J
N002-SB009-1824-01	30175540071	SL	EPA 901.1	Cesium-137	, , J, , , , , ,	J
N002-SB009-1824-01	30175540071	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB009-1824-01	30175540071	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB009-1824-01	30175540071	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB009-2430-01	30175540072	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB009-2430-01	30175540072	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB009-2430-01	30175540072	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB009-2430-01	30175540072	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB009-2430-01	30175540072	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB009-2430-01	30175540072	SL	HSL-300	Thorium-228	J1+, , , , , , , ,	J
N002-SB009-2430-01	30175540072	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB009-3036-01	30175540073	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB009-3036-01	30175540073	SL	EPA 901.1	Lead-210	, , J, , , , , ,	J
N002-SB009-3036-01	30175540073	SL	EPA 901.1	Thallium-208	J1+, , , P1, , , , ,	J
N002-SB009-3036-01	30175540073	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB009-3036-01	30175540073	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB009-3642-01	30175540074	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB009-3642-01	30175540074	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB009-3642-01	30175540074	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB009-3642-01	30175540074	SL	EPA 901.1	Thallium-208	J1+, , , P1, , , , ,	J
N002-SB009-3642-01	30175540074	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB009-3642-01	30175540074	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB009-3642-01	30175540074	SL	HSL-300	Thorium-228	J1+, , , , , , , ,	J
N002-SB009-3642-01	30175540074	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB009-4248-01	30175540075	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB009-4248-01	30175540075	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB009-4248-01	30175540075	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB009-4248-01	30175540075	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB009-4248-01	30175540075	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB009-4248-01	30175540075	SL	HSL-300	Thorium-228	J1+, S-, , , , , , ,	J
N002-SB009-4248-01	30175540075	SL	HSL-300	Thorium-230	, S-, , , , , , ,	J
N002-SB009-4248-01	30175540075	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB009-4248-01	30175540075	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB010-0006-01	30175540076	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB010-0006-01	30175540076	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB010-0006-01	30175540076	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB010-0006-01	30175540076	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB010-0006-01	30175540076	SL	HSL-300	Thorium-228	, S-, , , , , , ,	J
N002-SB010-0006-01	30175540076	SL	HSL-300	Thorium-230	, S-, , , , , , ,	J
N002-SB010-0006-01	30175540076	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB010-0612-01	30175540077	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB010-0612-01	30175540077	SL	EPA 901.1	Lead-210	, , J, , , , , ,	J
N002-SB010-0612-01	30175540077	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J

Client ID	Internal ID	Matrix	Method	Isotope	Intermediate Qualifier	Final Qualifier
N002-SB010-0612-01	30175540077	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB010-0612-01	30175540077	SL	HSL-300	Thorium-228	, S-, , , , , , ,	J
N002-SB010-0612-01	30175540077	SL	HSL-300	Thorium-230	, S-, , , , , , ,	J
N002-SB010-0612-01	30175540077	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB010-1218-01	30175540078	SL	EPA 901.1	Cesium-137	, , J, , , , , ,	J
N002-SB010-1218-01	30175540078	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB010-1218-01	30175540078	SL	EPA 901.1	Thallium-208	J1+, , , P1, , , , ,	J
N002-SB010-1218-01	30175540078	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB010-1218-01	30175540078	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB010-1218-01	30175540078	SL	HSL-300	Thorium-228	J1+, S-, , , , , , ,	J
N002-SB010-1218-01	30175540078	SL	HSL-300	Thorium-230	, S-, , , , , , ,	J
N002-SB010-1218-01	30175540078	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB010-1218-01	30175540078	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB010-1218-02	30175540079	SL	EPA 901.1	Cesium-137	, , J, , , , , ,	J
N002-SB010-1218-02	30175540079	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB010-1218-02	30175540079	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB010-1218-02	30175540079	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB010-1218-02	30175540079	SL	HSL-300	Thorium-228	, S-, , , , , , ,	J
N002-SB010-1218-02	30175540079	SL	HSL-300	Thorium-230	, S-, , , , , , ,	J
N002-SB010-1218-02	30175540079	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB010-1218-02	30175540079	SL	HSL-300	U-235/236	, , U, , , , , ,	U
N002-SB010-1824-01	30175540080	SL	EPA 901.1	Bismuth-212	, , J, PP1, , , , ,	J
N002-SB010-1824-01	30175540080	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB010-1824-01	30175540080	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB010-1824-01	30175540080	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB010-1824-01	30175540080	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB010-1824-01	30175540080	SL	HSL-300	Thorium-228	J1+, S-, , , , , , ,	J
N002-SB010-1824-01	30175540080	SL	HSL-300	Thorium-230	, S-, , , , , , ,	J
N002-SB010-1824-01	30175540080	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB010-1824-01	30175540080	SL	HSL-300	U-235/236	, , U, , , , , ,	U
N002-SB010-2430-01	30175540081	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB010-2430-01	30175540081	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB010-2430-01	30175540081	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB010-2430-01	30175540081	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB010-2430-01	30175540081	SL	HSL-300	Thorium-228	, S-, , , , , , ,	J
N002-SB010-2430-01	30175540081	SL	HSL-300	Thorium-230	, S-, , , , , , ,	J
N002-SB010-2430-01	30175540081	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB010-2430-02	30175540082	SL	EPA 901.1	Bismuth-212	, , J, PP1, , , , ,	J
N002-SB010-2430-02	30175540082	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB010-2430-02	30175540082	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB010-2430-02	30175540082	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB010-2430-02	30175540082	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB010-2430-02	30175540082	SL	HSL-300	Thorium-228	J1+, S-, , , , , , ,	J
N002-SB010-2430-02	30175540082	SL	HSL-300	Thorium-230	, S-, , , , , , ,	J
N002-SB010-2430-02	30175540082	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J

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N002-SB010-2430-02	30175540082	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB010-3036-01	30175540083	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB010-3036-01	30175540083	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB010-3036-01	30175540083	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB010-3036-01	30175540083	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB010-3036-01	30175540083	SL	HSL-300	Thorium-228	J1+, S-, , , , , , ,	J
N002-SB010-3036-01	30175540083	SL	HSL-300	Thorium-230	, S-, , , , , , ,	J
N002-SB010-3036-01	30175540083	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB010-3036-01	30175540083	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB010-3642-01	30175540084	SL	EPA 901.1	Bismuth-212	, , U, PP1, , , , ,	U
N002-SB010-3642-01	30175540084	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB010-3642-01	30175540084	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB010-3642-01	30175540084	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB010-3642-01	30175540084	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB010-3642-01	30175540084	SL	HSL-300	Thorium-228	J1+, S-, , , , , , ,	J
N002-SB010-3642-01	30175540084	SL	HSL-300	Thorium-230	, S-, , , , , , ,	J
N002-SB010-3642-01	30175540084	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB010-3642-01	30175540084	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB010-3642-02	30175540085	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB010-3642-02	30175540085	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB010-3642-02	30175540085	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB010-3642-02	30175540085	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB010-3642-02	30175540085	SL	HSL-300	Thorium-228	J1+, S-, , , , , , ,	J
N002-SB010-3642-02	30175540085	SL	HSL-300	Thorium-230	, S-, , , , , , ,	J
N002-SB010-3642-02	30175540085	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB010-3642-02	30175540085	SL	HSL-300	U-235/236	, , U, , , , , ,	U
N002-SB010-4248-01	30175540086	SL	EPA 901.1	Bismuth-212	, , J, PP1, , , , ,	J
N002-SB010-4248-01	30175540086	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB010-4248-01	30175540086	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB010-4248-01	30175540086	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB010-4248-01	30175540086	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB010-4248-01	30175540086	SL	HSL-300	Thorium-228	J1+, S-, , , , , , ,	J
N002-SB010-4248-01	30175540086	SL	HSL-300	Thorium-230	, S-, , , , , , ,	J
N002-SB010-4248-01	30175540086	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB011-0006-01	30175540087	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB011-0006-01	30175540087	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB011-0006-01	30175540087	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB011-0006-01	30175540087	SL	HSL-300	Thorium-228	, S-, , , , , , ,	J
N002-SB011-0006-01	30175540087	SL	HSL-300	Thorium-230	, S-, , , , , , ,	J
N002-SB011-0006-01	30175540087	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB011-0612-01	30175540088	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB011-0612-01	30175540088	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB011-0612-01	30175540088	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB011-0612-01	30175540088	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB011-0612-01	30175540088	SL	HSL-300	Thorium-228	, S-, , , , , , ,	J

Client ID	Internal ID	Matrix	Method	Isotope	Intermediate Qualifier	Final Qualifier
N002-SB011-0612-01	30175540088	SL	HSL-300	Thorium-230	, S-, , , , , , ,	J
N002-SB011-0612-01	30175540088	SL	HSL-300	Thorium-232	, S-, , , , , , ,	J
N002-SB011-1218-01	30175540089	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB011-1218-01	30175540089	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB011-1218-01	30175540089	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB011-1218-01	30175540089	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB011-1218-01	30175540089	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB011-1824-01	30175540090	SL	EPA 901.1	Bismuth-212	, , U, PP1, , , , ,	U
N002-SB011-1824-01	30175540090	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB011-1824-01	30175540090	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB011-1824-01	30175540090	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB011-1824-01	30175540090	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB011-1824-01	30175540090	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB011-2430-01	30175540091	SL	EPA 901.1	Bismuth-212	, , J, PP1, , , , ,	J
N002-SB011-2430-01	30175540091	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB011-2430-01	30175540091	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB011-2430-01	30175540091	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB011-2430-01	30175540091	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB011-3036-01	30175540092	SL	EPA 901.1	Bismuth-212	, , J, PP1, , , , ,	J
N002-SB011-3036-01	30175540092	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB011-3036-01	30175540092	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB011-3036-01	30175540092	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB011-3036-01	30175540092	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB011-3036-01	30175540092	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB011-3642-01	30175540093	SL	EPA 901.1	Bismuth-212	, , J, PP1, , , , ,	J
N002-SB011-3642-01	30175540093	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB011-3642-01	30175540093	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB011-3642-01	30175540093	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB011-3642-01	30175540093	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB011-4248-01	30175540094	SL	EPA 901.1	Lead-210	, , J, , , , , ,	J
N002-SB011-4248-01	30175540094	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB011-4248-01	30175540094	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB012-0006-01	30175540095	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB012-0006-01	30175540095	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB012-0006-01	30175540095	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB012-0006-01	30175540095	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB012-0612-01	30175540096	SL	EPA 901.1	Bismuth-212	, , U, PP1, , , , ,	U
N002-SB012-0612-01	30175540096	SL	EPA 901.1	Cesium-137	, , J, , , , , ,	J
N002-SB012-0612-01	30175540096	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB012-0612-01	30175540096	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB012-0612-01	30175540096	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB012-0612-01	30175540096	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB012-1218-01	30175540097	SL	EPA 901.1	Bismuth-212	, , U, PP1, , , , ,	U
N002-SB012-1218-01	30175540097	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB012-1218-01	30175540097	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U

Client ID	Internal ID	Matrix	Method	Isotope	Intermediate Qualifier	Final Qualifier
N002-SB012-1218-01	30175540097	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB012-1218-01	30175540097	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB012-1824-01	30175540098	SL	EPA 901.1	Cesium-137	, , U, , , , , ,	U
N002-SB012-1824-01	30175540098	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB012-1824-01	30175540098	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB012-1824-01	30175540098	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB012-1824-01	30175540098	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB012-2430-01	30175540099	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB012-2430-01	30175540099	SL	EPA 901.1	Cesium-137	J1+, , U, , , , , ,	UJ
N002-SB012-2430-01	30175540099	SL	EPA 901.1	Lead-210	, , J, , , , , ,	J
N002-SB012-2430-01	30175540099	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB012-2430-01	30175540099	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB012-2430-01	30175540099	SL	HSL-300	U-235/236	, , U, , , , , ,	U
N002-SB012-3036-01	30175540100	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB012-3036-01	30175540100	SL	EPA 901.1	Cesium-137	J1+, , U, , , , , ,	UJ
N002-SB012-3036-01	30175540100	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB012-3036-01	30175540100	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB012-3036-01	30175540100	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB012-3642-01	30175540101	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB012-3642-01	30175540101	SL	EPA 901.1	Cesium-137	J1+, , U, , , , , ,	UJ
N002-SB012-3642-01	30175540101	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB012-3642-01	30175540101	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB012-3642-01	30175540101	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB012-3642-01	30175540101	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB012-4248-01	30175540102	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB012-4248-01	30175540102	SL	EPA 901.1	Cesium-137	J1+, , U, , , , , ,	UJ
N002-SB012-4248-01	30175540102	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB012-4248-01	30175540102	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB012-4248-01	30175540102	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB013-0006-01	30175540103	SL	EPA 901.1	Cesium-137	J1+, , U, , , , , ,	UJ
N002-SB013-0006-01	30175540103	SL	EPA 901.1	Thorium-234	, , J, , , , , ,	J
N002-SB013-0006-01	30175540103	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB013-0612-01	30175540104	SL	EPA 901.1	Cesium-137	J1+, , U, , , , , ,	UJ
N002-SB013-0612-01	30175540104	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB013-0612-01	30175540104	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB013-1218-01	30175540105	SL	EPA 901.1	Cesium-137	J1+, , U, , , , , ,	UJ
N002-SB013-1218-01	30175540105	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB013-1218-01	30175540105	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB013-1218-01	30175540105	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB013-1218-01	30175540105	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB013-1824-01	30175540106	SL	EPA 901.1	Cesium-137	J1+, , U, , , , , ,	UJ
N002-SB013-1824-01	30175540106	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB013-1824-01	30175540106	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB013-1824-01	30175540106	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB013-2430-01	30175540107	SL	EPA 901.1	Cesium-137	J1+, , U, , , , , ,	UJ

Client ID	Internal ID	Matrix	Method	Isotope	Intermediate Qualifier	Final Qualifier
N002-SB013-2430-01	30175540107	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB013-2430-01	30175540107	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB013-2430-01	30175540107	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB013-2430-01	30175540107	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB013-3036-01	30175540108	SL	EPA 901.1	Cesium-137	J1+, , U, , , , , ,	UJ
N002-SB013-3036-01	30175540108	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB013-3036-01	30175540108	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB013-3036-01	30175540108	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB013-3642-01	30175540109	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB013-3642-01	30175540109	SL	EPA 901.1	Cesium-137	J1+, , U, , , , , ,	UJ
N002-SB013-3642-01	30175540109	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB013-3642-01	30175540109	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB013-3642-01	30175540109	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB013-4248-01	30175540110	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB013-4248-01	30175540110	SL	EPA 901.1	Cesium-137	J1+, , U, , , , , ,	UJ
N002-SB013-4248-01	30175540110	SL	EPA 901.1	Lead-210	, , J, , , , , ,	J
N002-SB013-4248-01	30175540110	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB013-4248-01	30175540110	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB013-4248-01	30175540110	SL	HSL-300	Thorium-228	, , , , , , J, ,	J
N002-SB013-4248-01	30175540110	SL	HSL-300	Thorium-230	, , J, , , , J, ,	J
N002-SB013-4248-01	30175540110	SL	HSL-300	Thorium-232	, , , , , , J, ,	J
N002-SB013-4248-01	30175540110	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB014-0006-01	30175540111	SL	EPA 901.1	Cesium-137	J1+, , U, , , , , ,	UJ
N002-SB014-0006-01	30175540111	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB014-0612-01	30175540112	SL	EPA 901.1	Cesium-137	J1+, , U, , , , , ,	UJ
N002-SB014-0612-01	30175540112	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB014-0612-01	30175540112	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB014-0612-01	30175540112	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB014-1218-01	30175540113	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB014-1218-01	30175540113	SL	EPA 901.1	Cesium-137	J1+, , U, , , , , ,	UJ
N002-SB014-1218-01	30175540113	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB014-1218-01	30175540113	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB014-1218-01	30175540113	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB014-1218-01	30175540113	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB014-1824-01	30175540114	SL	EPA 901.1	Cesium-137	J1+, , U, , , , , ,	UJ
N002-SB014-1824-01	30175540114	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB014-1824-01	30175540114	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB014-1824-01	30175540114	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB014-2430-01	30175540115	SL	EPA 901.1	Cesium-137	J1+, , U, , , , , ,	UJ
N002-SB014-2430-01	30175540115	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB014-2430-01	30175540115	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB014-3036-01	30175540116	SL	EPA 901.1	Bismuth-212	, , J, , , , , ,	J
N002-SB014-3036-01	30175540116	SL	EPA 901.1	Cesium-137	J1+, , U, , , , , ,	UJ
N002-SB014-3036-01	30175540116	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB014-3036-01	30175540116	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U

Client ID	Internal ID	Matrix	Method	Isotope	Intermediate Qualifier	Final Qualifier
N002-SB014-3036-01	30175540116	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB014-3036-01	30175540116	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB014-3642-01	30175540117	SL	EPA 901.1	Bismuth-212	, , U, , , , , ,	U
N002-SB014-3642-01	30175540117	SL	EPA 901.1	Cesium-137	J1+, , U, , , , , ,	UJ
N002-SB014-3642-01	30175540117	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB014-3642-01	30175540117	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB014-3642-01	30175540117	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
N002-SB014-3642-01	30175540117	SL	HSL-300	U-235/236	, , J, , , , , ,	J
N002-SB014-4248-01	30175540118	SL	EPA 901.1	Cesium-137	J1+, , U, , , , , ,	UJ
N002-SB014-4248-01	30175540118	SL	EPA 901.1	Lead-210	, , U, , , , , ,	U
N002-SB014-4248-01	30175540118	SL	EPA 901.1	Thorium-234	, , U, , , , , ,	U
N002-SB014-4248-01	30175540118	SL	EPA 901.1	Uranium-235	, , R, , , , , ,	R
RB-N-160301	30175540119	Water	EPA 903.1	Radium-226	, , U, , , , , ,	U
RB-N-160301	30175540119	Water	EPA 904.0	Radium-228	, , U, , , , , ,	U
RB-N-160301	30175540119	Water	HSL-300	Thorium-228	, , U, , , , , ,	U
RB-N-160301	30175540119	Water	HSL-300	Thorium-230	, , U, , , , , ,	U
RB-N-160301	30175540119	Water	HSL-300	Thorium-232	, , U, , , , , ,	U
RB-N-160301	30175540119	Water	HSL-300	U-233/234	J1+, , J, , , , , ,	J
RB-N-160301	30175540119	Water	HSL-300	U-235/236	, , U, , , , , ,	U
RB-N-160301	30175540119	Water	HSL-300	Uranium-238	, , J, , , , , ,	J
RB-N-160302	30175540120	Water	EPA 903.1	Radium-226	, , U, , , , , ,	U
RB-N-160302	30175540120	Water	EPA 904.0	Radium-228	, , U, , , , , ,	U
RB-N-160302	30175540120	Water	HSL-300	Thorium-228	, , U, , , , , ,	U
RB-N-160302	30175540120	Water	HSL-300	Thorium-230	, , U, , , , , ,	U
RB-N-160302	30175540120	Water	HSL-300	Thorium-232	, , U, , , , , ,	U
RB-N-160302	30175540120	Water	HSL-300	U-233/234	J1+, , J, , , , , ,	J
RB-N-160302	30175540120	Water	HSL-300	U-235/236	, , U, , , , , ,	U
RB-N-160302	30175540120	Water	HSL-300	Uranium-238	, , U, , , , , ,	U
RB-N-160303	30175540121	Water	EPA 903.1	Radium-226	, , U, , , , , ,	U
RB-N-160303	30175540121	Water	EPA 904.0	Radium-228	, , U, , , , , ,	U
RB-N-160303	30175540121	Water	HSL-300	Thorium-228	, , U, , , , , ,	U
RB-N-160303	30175540121	Water	HSL-300	Thorium-230	, , U, , , , , ,	U
RB-N-160303	30175540121	Water	HSL-300	Thorium-232	, , U, , , , , ,	U
RB-N-160303	30175540121	Water	HSL-300	U-233/234	J1+, , J, , , , , ,	J
RB-N-160303	30175540121	Water	HSL-300	U-235/236	, , U, , , , , ,	U
RB-N-160303	30175540121	Water	HSL-300	Uranium-238	, , U, , , , , ,	U

Detection Capability (MARLAP 8.5.3.2)

IF THE PROJECT REQUIRES A CERTAIN DETECTION CAPABILITY, THE REQUIREMENT SHOULD BE EXPRESSED AS A Required minimum detectable concentration (RMDC). A failure to meet the RMDC is more often an important issue when the analyte is not detected.

THE RMDC IS USUALLY SPECIFIED IN THE QAPP AND IS COMPARED TO THE SAMPLE-SPECIFIC MDC ACHIEVED BY THE method. Required detection limits are provided in the QAPP. Samples are qualified "UJ" where no activity was detected in a sample but the required detection limit was not attained.

Discussion

IN PRACTICE THE REQUIRED MDC WAS SUFFICIENTLY HIGH THAT THE ACTUAL DETECTION LIMIT WAS WELL BELow the required detection limit.

B. Large or Unusual Uncertainty (MARLAP 8.5.3.3)

THE REPORTED COMBINED STANDARD UNCERTAINTY IS COMPARED TO THE MAXIMUM ALLOWABLE STANDARD UNCERTAINTY. EITHER absolute (in concentration units) or relative uncertainties (expressed as a percent) are used in the comparison, depending on the reported concentration.

Discussion

NO SPECIFIC REQUIREMENT IN THE PROJECT QAPP WAS RECOGNIZED FOR QUALIFYING RESULTS BAsed on maximum allowable uncertainty. Samples were assigned an intermediate qualifier 'Q' if the sample result was not statistically distinguishable from zero based on a one-tailed 95% confidence bound. In practice these samples tended to receive either a 'J' or a 'U' final data qualifier, depending upon whether the nominal critical level was exceeded.

SAMPLES WERE QUALIFIED AS '*J*' if activity was found in the blank and the sample result was less than 5 times the result in the blank, or if there was some other reason to conclude that the analytical result was biased high and more uncertain than usual. The "other reason" may be surmised from the intermediate data qualifiers that were assigned to the result in nearly every instance.

8. SUMMARY OF DATA USABILITY

OF 1,912 FIELD SAMPLE RESULTS, THERE WERE A TOTAL OF 755 RADIONUCLIDE RESULTS THAT CARRY A DATA qualifier.. The meaning of each qualifier is described in section 3 of this report. The count of each final qualifier type for field samples is provided in the following table.

Table of the number of each of the various final data qualifiers.

Final Qualifier	Number of Occurrences
	1157
J	306
R	118
U	305
UJ	26

THE DISTRIBUTION OF QUALIFIERS AMONG FIELD SAMPLES IS FURTHER BROKEN DOWN IN THE FOLLOWING TABLE.

Table of counts of various qualifiers by counting technique.

Method Name	Method	Final Qualifier	Number of Occurrences
Alpha Spectroscopy	HSL-300		496
Alpha Spectroscopy	HSL-300	J	200
Alpha Spectroscopy	HSL-300	U	24
Alpha Spectroscopy	HSL-300	UJ	6

Method Name	Method	Final Qualifier	Number of Occurrences
Gamma Spectroscopy	EPA 901.1		661
Gamma Spectroscopy	EPA 901.1	J	106
Gamma Spectroscopy	EPA 901.1	R	118
Gamma Spectroscopy	EPA 901.1	U	275
Gamma Spectroscopy	EPA 901.1	UJ	20
Radium-226 in Drinking Water	EPA 903.1	U	3
Radium-228 in Drinking Water	EPA 904.0	U	3

9. REFERENCES

Site Specific UFP Quality Assurance Project Plan Niagara Falls Boulevard Site, Niagara Falls, Niagara County, New York, DC No.: RST3-02-D-0033, TDD No.: TO-0006-0061. August 2015.

Multi-Agency Radiological Laboratory Analytical Protocols Manual, Volume I, NUREG-1576, EPA 402-B-04-001A, NTIS PB2004-105421, July 2004.

10. APPENDED DOCUMENTS

- Consolidated table of analytical results with qualifiers (76 pages).
- Radiological Data Verification/Validation Checklist (2 pages).

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
N002-SB001-0006-01										
	Bismuth-212	EPA 901.1	30175540001	SL	0.09	2.1	2.22	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540001	SL	0	0.05	0.13	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540001	SL	2.36	17.12	21.9	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540001	SL	1.01	0.25	0.25	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540001	SL	18.2	3.44	1.22	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540001	SL	1.03	0.28	0.23	, , , P1, , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540001	SL	1.67	0.44	0.18	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540001	SL	0.52	0.14	0.09	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540001	SL	1.08	0.45	0.47	, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540001	SL	0.83	0.36	0.24	, S-, , P1, , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540001	SL	0.61	0.3	0.17	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540001	SL	2.34	2.85	5.06	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540001	SL	1.12	0.3	0.12	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540001	SL	0.13	0.1	0.05	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540001	SL	0.2	0.14	0.13	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540001	SL	1.02	0.28	0.04	, , , , , , , ,		pCi/g
N002-SB001-0612-01										
	Bismuth-212	EPA 901.1	30175540002	SL	0.19	2.91	3.32	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540002	SL	0	0.16	0.19	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540002	SL	0.88	3.86	5.11	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540002	SL	1.41	0.32	0.24	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540002	SL	27.55	5.23	1.42	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540002	SL	1.41	0.31	0.22	, , , P1, , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Radium-228	EPA 901.1	30175540002	SL	1.57	0.44	0.56	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540002	SL	0.41	0.15	0.13	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540002	SL	1.07	0.46	0.46	, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540002	SL	0.64	0.33	0.28	, S-, , P1, , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540002	SL	1.01	0.42	0.1	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540002	SL	2.47	2.22	2.71	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540002	SL	0.71	0.22	0.08	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540002	SL	0.09	0.08	0.05	J1+, , , , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540002	SL	0.36	0.16	0.16	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540002	SL	0.9	0.26	0.08	, , , , , , , ,		pCi/g
N002-SB001-1218-01										
	Bismuth-212	EPA 901.1	30175540003	SL	2.05	2	1.96	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540003	SL	0	0.03	0.2	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540003	SL	-9.97	23.93	29.55	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540003	SL	1.39	0.3	0.24	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540003	SL	26.35	4.74	1.78	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540003	SL	1.4	0.28	0.22	, , , P1, , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540003	SL	1.73	0.49	0.31	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540003	SL	0.38	0.15	0.14	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540003	SL	0.9	0.45	0.46	J1+, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540003	SL	1.21	0.5	0.22	, S-, , P1, , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540003	SL	1.25	0.51	0.22	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540003	SL	0	2.85	5.89	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540003	SL	0.94	0.27	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540003	SL	0.03	0.07	0.09	J1+, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540003	SL	0.01	0.19	0.23	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540003	SL	0.84	0.25	0.04	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
N002-SB001-1824-01										
	Bismuth-212	EPA 901.1	30175540004	SL	2.26	2.58	2.76	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540004	SL	0	0.03	0.25	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540004	SL	0.3	4.16	5.59	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540004	SL	1.7	0.36	0.24	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540004	SL	29.92	5.72	1.59	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540004	SL	1.49	0.34	0.37	, , , P1, , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540004	SL	2.3	0.64	0.43	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540004	SL	0.41	0.18	0.17	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540004	SL	1.14	0.58	0.62	, S-, , , , , J, ,	J	pCi/g
	Thorium-230	HSL-300	30175540004	SL	0.96	0.49	0.28	, S-, , P1, , , J, ,	J	pCi/g
	Thorium-232	HSL-300	30175540004	SL	1.03	0.5	0.16	, S-, , , , , J, ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540004	SL	1.39	1.96	3.38	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540004	SL	0.84	0.24	0.08	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540004	SL	0.02	0.06	0.11	J1+, , U, , , , , ,	UJ	pCi/g
	Uranium-235	EPA 901.1	30175540004	SL	0.27	0.3	0.23	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540004	SL	0.9	0.25	0.05	, , , , , , , ,		pCi/g
N002-SB001-2430-01										
	Bismuth-212	EPA 901.1	30175540005	SL	2.29	1.7	1.93	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540005	SL	0	0.07	0.2	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540005	SL	-2.98	27.47	34.67	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540005	SL	1.36	0.32	0.27	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540005	SL	24.48	4.54	1.54	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540005	SL	1.45	0.37	0.21	, , , P1, , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540005	SL	1.74	0.5	0.23	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540005	SL	0.44	0.16	0.13	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540005	SL	1.54	0.52	0.34	, S-, , , , , , ,	J	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thorium-230	HSL-300	30175540005	SL	0.97	0.38	0.22	, S-, , P1, , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540005	SL	1.07	0.4	0.19	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540005	SL	1.94	2.66	6.96	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540005	SL	0.89	0.27	0.08	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540005	SL	0.16	0.11	0.05	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540005	SL	0.27	0.25	0.23	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540005	SL	1.42	0.36	0.09	, , , , , , , ,		pCi/g
N002-SB001-3036-01										
	Bismuth-212	EPA 901.1	30175540006	SL	1.2	2.58	2.92	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540006	SL	0	0.04	0.24	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540006	SL	2.48	3.58	4.62	, , J, , , , , ,	J	pCi/g
	Lead-212	EPA 901.1	30175540006	SL	1.7	0.37	0.25	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540006	SL	18.2	4.13	1.68	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540006	SL	1.7	0.43	0.25	, , , P1, , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540006	SL	1.68	0.55	0.46	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540006	SL	0.36	0.22	0.22	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540006	SL	1.16	0.43	0.29	, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540006	SL	1.03	0.38	0.08	, S-, , P1, , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540006	SL	0.94	0.36	0.08	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540006	SL	2.5	1.9	3.69	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540006	SL	1.03	0.29	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540006	SL	0.11	0.09	0.09	J1+, , , , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540006	SL	0.09	0.18	0.24	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540006	SL	0.91	0.26	0.08	, , , , , , , ,		pCi/g
N002-SB001-3642-01										
	Bismuth-212	EPA 901.1	30175540007	SL	1.91	1.14	0.98	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540007	SL	0	0.02	0.14	, , U, , , , , ,	U	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Lead-210	EPA 901.1	30175540007	SL	6.99	17.82	22.33	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540007	SL	1.3	0.29	0.24	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540007	SL	21.1	3.93	1.49	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540007	SL	1.34	0.35	0.24	, , , P1, , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540007	SL	1.13	0.48	0.44	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540007	SL	0.41	0.15	0.13	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540007	SL	1.09	0.41	0.31	, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540007	SL	1.2	0.43	0.22	, S-, , P1, , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540007	SL	1.38	0.46	0.15	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540007	SL	1.84	4.21	5.25	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540007	SL	0.73	0.23	0.08	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540007	SL	0.02	0.07	0.05	J1+, , U, , , , , ,	UJ	pCi/g
	Uranium-235	EPA 901.1	30175540007	SL	0.2	0.15	0.18	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540007	SL	1.13	0.3	0.04	, , , , , , , ,		pCi/g
N002-SB001-4248-01										
	Bismuth-212	EPA 901.1	30175540008	SL	1.57	1.54	3.68	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540008	SL	0	0.02	0.22	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540008	SL	2.64	3.66	4.67	, , J, , , , , ,	J	pCi/g
	Lead-212	EPA 901.1	30175540008	SL	1.41	0.31	0.21	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540008	SL	22.53	4.49	1.39	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540008	SL	1.46	0.37	0.3	, , , P1, , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540008	SL	1.5	0.53	0.38	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540008	SL	0.67	0.18	0.09	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540008	SL	1.29	0.48	0.41	, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540008	SL	0.89	0.36	0.13	, S-, , P1, , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540008	SL	1.06	0.4	0.09	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540008	SL	1.62	1.86	3.19	, , J, , , , , ,	J	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	U-233/234	HSL-300	30175540008	SL	0.82	0.24	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540008	SL	0.05	0.06	0.05	J1+, , , , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540008	SL	0.15	0.1	0.14	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540008	SL	1.19	0.3	0.08	, , , , , , , ,		pCi/g
N002-SB002-0006-01										
	Bismuth-212	EPA 901.1	30175540009	SL	0.03	2.08	2.18	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540009	SL	0.02	0.12	0.13	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540009	SL	4.59	16.49	20.75	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540009	SL	1.16	0.26	0.23	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540009	SL	19.8	3.41	0.71	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540009	SL	1.18	0.27	0.18	, , , P1, , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540009	SL	0.85	0.33	0.28	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540009	SL	0.31	0.1	0.09	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540009	SL	1.05	0.39	0.29	, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540009	SL	0.6	0.28	0.19	, S-, , P1, , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540009	SL	0.76	0.31	0.08	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540009	SL	1.13	1.25	5.52	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540009	SL	0.98	0.3	0.11	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540009	SL	0.04	0.08	0.12	J1+, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540009	SL	0.18	0.14	0.17	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540009	SL	1.11	0.33	0.09	, , , , , , , ,		pCi/g
N002-SB002-0612-01										
	Bismuth-212	EPA 901.1	30175540010	SL	3.47	1.74	1.46	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540010	SL	0.02	0.14	0.17	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540010	SL	0.61	3.4	4.53	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540010	SL	1.43	0.3	0.2	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540010	SL	24.03	4.6	1.29	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Radium-226	EPA 901.1	30175540010	SL	1.76	0.4	0.13	, , , P1, , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540010	SL	1.46	0.47	0.35	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540010	SL	0.67	0.2	0.14	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540010	SL	0.91	0.43	0.32	J1+, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540010	SL	0.71	0.37	0.26	, S-, , P1, , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540010	SL	1.02	0.44	0.21	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540010	SL	1.32	1.66	3.32	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540010	SL	1.04	0.29	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540010	SL	0.05	0.07	0.09	J1+, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540010	SL	0.12	0.15	0.18	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540010	SL	0.98	0.27	0.07	, , , , , , , ,		pCi/g
N002-SB002-0612-02										
	Bismuth-212	EPA 901.1	30175540011	SL	2.14	1.53	1.44	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540011	SL	0.01	0.12	0.14	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540011	SL	-2.22	20.48	25.85	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540011	SL	1.18	0.27	0.25	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540011	SL	23.71	4.21	1.43	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540011	SL	1.25	0.29	0.24	, , , P1, , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540011	SL	1.48	0.41	0.33	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540011	SL	0.47	0.17	0.14	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540011	SL	1.12	0.45	0.38	, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540011	SL	1.01	0.4	0.2	, S-, , P1, , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540011	SL	0.87	0.37	0.09	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540011	SL	2.57	2.97	5.19	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540011	SL	1.05	0.29	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540011	SL	0.08	0.08	0.05	J1+, , , , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540011	SL	0.22	0.16	0.17	, , R, , , , , ,	R	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Uranium-238	HSL-300	30175540011	SL	1.25	0.33	0.04	, , , , , , , ,		pCi/g
N002-SB002-1218-01										
	Bismuth-212	EPA 901.1	30175540012	SL	2.07	1.61	1.62	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540012	SL	0	0.11	0.14	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540012	SL	6.57	3.3	3.36	, , , , , , , ,		pCi/g
	Lead-212	EPA 901.1	30175540012	SL	1.42	0.31	0.22	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540012	SL	24.81	4.84	1.42	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540012	SL	1.35	0.36	0.29	, , , P1, , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540012	SL	1.41	0.57	0.5	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540012	SL	0.62	0.2	0.15	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540012	SL	1.3	0.55	0.42	, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540012	SL	0.86	0.42	0.13	, S-, , P1, , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540012	SL	0.95	0.44	0.13	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540012	SL	2.97	2.09	3.08	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540012	SL	1.21	0.33	0.08	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540012	SL	-0	0.07	0.1	J1+, , U, , , , , ,	UJ	pCi/g
	Uranium-235	EPA 901.1	30175540012	SL	0.13	0.13	0.17	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540012	SL	0.98	0.28	0.08	, , , , , , , ,		pCi/g
N002-SB002-1824-01										
	Bismuth-212	EPA 901.1	30175540013	SL	1.94	1.48	2.41	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540013	SL	0	0.05	0.15	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540013	SL	-1.2	21.68	27.5	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540013	SL	1.38	0.31	0.27	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540013	SL	23.19	4.74	2.46	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540013	SL	1.39	0.29	0.16	, , , P1, , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540013	SL	1.95	0.48	0.19	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540013	SL	0.49	0.17	0.14	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thorium-228	HSL-300	30175540013	SL	0.91	0.52	0.63	J1+, S-, , , , , J, ,	J	pCi/g
	Thorium-230	HSL-300	30175540013	SL	0.38	0.3	0.28	, S-, , P1, , , J, ,	J	pCi/g
	Thorium-232	HSL-300	30175540013	SL	0.62	0.38	0.15	, S-, , , , , J, ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540013	SL	0.84	1.66	5.71	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540013	SL	1.1	0.31	0.11	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540013	SL	0.09	0.09	0.1	J1+, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540013	SL	0.22	0.16	0.17	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540013	SL	0.85	0.26	0.04	, , , , , , , ,		pCi/g
N002-SB002-1824-02										
	Bismuth-212	EPA 901.1	30175540014	SL	1.86	1.73	1.68	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540014	SL	0	0.14	0.15	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540014	SL	-2.82	19.09	24.19	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540014	SL	1.36	0.3	0.26	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540014	SL	27.4	4.52	0.79	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540014	SL	1.52	0.33	0.21	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540014	SL	1.46	0.5	0.36	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540014	SL	0.4	0.13	0.11	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540014	SL	1.11	0.6	0.7	, S-, , , , , J, ,	J	pCi/g
	Thorium-230	HSL-300	30175540014	SL	1.08	0.54	0.34	, S-, , P1, , , J, ,	J	pCi/g
	Thorium-232	HSL-300	30175540014	SL	0.92	0.49	0.17	, S-, , , , , J, ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540014	SL	2.99	3.88	4.74	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540014	SL	1.06	0.29	0.13	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540014	SL	0.06	0.07	0.05	J1+, , , , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540014	SL	0.31	0.18	0.16	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540014	SL	1.08	0.3	0.12	, , , , , , , ,		pCi/g
N002-SB002-2430-01										
	Bismuth-212	EPA 901.1	30175540015	SL	3.23	1.96	2.18	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Cesium-137	EPA 901.1	30175540015	SL	0.02	0.16	0.2	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540015	SL	1.19	3.47	4.6	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540015	SL	1.2	0.3	0.26	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540015	SL	23.43	4.7	1.48	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540015	SL	1.63	0.38	0.23	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540015	SL	1.39	0.38	0.4	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540015	SL	0.46	0.16	0.12	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540015	SL	1.29	0.46	0.34	, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540015	SL	0.94	0.38	0.25	, S-, , P1, , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540015	SL	1.12	0.41	0.17	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540015	SL	3.65	2	2.47	, , , , , , , ,		pCi/g
	U-233/234	HSL-300	30175540015	SL	1.08	0.29	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540015	SL	0.04	0.06	0.1	J1+, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540015	SL	0.22	0.16	0.18	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540015	SL	0.92	0.26	0.09	, , , , , , , ,		pCi/g
N002-SB002-3036-01										
	Bismuth-212	EPA 901.1	30175540016	SL	2.07	1.68	2.14	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540016	SL	0	0.06	0.23	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540016	SL	-6.7	22.65	28.37	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540016	SL	1.45	0.31	0.24	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540016	SL	20.12	3.78	1.31	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540016	SL	1.49	0.39	0.34	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540016	SL	1.31	0.55	0.62	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540016	SL	0.53	0.16	0.11	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540016	SL	1.61	0.52	0.41	, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540016	SL	1.2	0.42	0.21	, S-, , P1, , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540016	SL	1.04	0.38	0.15	, S-, , , , , , ,	J	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thorium-234	EPA 901.1	30175540016	SL	0	2.55	5.86	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540016	SL	1.49	0.37	0.13	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540016	SL	0.05	0.07	0.05	J1+, , , , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540016	SL	0.29	0.15	0.16	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540016	SL	1.09	0.3	0.04	, , , , , , , ,		pCi/g
N002-SB002-3036-02										
	Bismuth-212	EPA 901.1	30175540017	SL	0.92	2.61	2.95	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540017	SL	0.01	0.12	0.15	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540017	SL	0.93	3.9	5.18	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540017	SL	1.11	0.28	0.25	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540017	SL	22.85	4.65	1.51	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540017	SL	1.82	0.44	0.15	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540017	SL	1.58	0.49	0.41	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540017	SL	0.47	0.16	0.12	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540017	SL	1.84	0.59	0.36	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540017	SL	0.91	0.38	0.23	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540017	SL	1.05	0.41	0.09	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540017	SL	1.12	1.8	3.36	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540017	SL	1.42	0.39	0.11	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540017	SL	0.16	0.12	0.12	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540017	SL	0.34	0.18	0.18	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540017	SL	1.1	0.33	0.09	, , , , , , , ,		pCi/g
N002-SB002-3642-01										
	Bismuth-212	EPA 901.1	30175540018	SL	2.39	1.4	1.23	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540018	SL	0	0.05	0.15	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540018	SL	0.41	21.57	27.31	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540018	SL	1.21	0.27	0.24	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Potassium-40	EPA 901.1	30175540018	SL	20.46	3.73	1.34	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540018	SL	1.34	0.31	0.26	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540018	SL	1.43	0.41	0.28	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540018	SL	0.46	0.13	0.08	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540018	SL	1.08	0.43	0.26	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540018	SL	1.18	0.44	0.21	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540018	SL	0.82	0.36	0.18	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540018	SL	1.95	2.61	5.46	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540018	SL	1.33	0.35	0.11	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540018	SL	-0	0.07	0.1	J1+, , U, , , , , ,	UJ	pCi/g
	Uranium-235	EPA 901.1	30175540018	SL	0.2	0.12	0.14	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540018	SL	1.22	0.33	0.08	, , , , , , , ,		pCi/g
N002-SB002-4248-01										
	Bismuth-212	EPA 901.1	30175540019	SL	0.81	2.3	2.61	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540019	SL	0	0.03	0.26	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540019	SL	1.46	3.66	4.78	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540019	SL	1.38	0.31	0.26	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540019	SL	20.9	4.21	1.33	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540019	SL	1.64	0.39	0.14	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540019	SL	1.65	0.55	0.36	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540019	SL	0.47	0.18	0.15	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540019	SL	1.46	0.48	0.32	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540019	SL	0.93	0.36	0.17	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540019	SL	1.18	0.41	0.08	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540019	SL	0.05	2.55	3.31	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540019	SL	1.23	0.33	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540019	SL	0.04	0.07	0.05	J1+, , J, , , , , ,	J	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Uranium-235	EPA 901.1	30175540019	SL	0.11	0.16	0.2	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540019	SL	1.13	0.31	0.04	, , , , , , , ,		pCi/g
N002-SB003-0006-01										
	Bismuth-212	EPA 901.1	30175540020	SL	126.93	18.55	8.52	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540020	SL	-0.33	0.67	0.67	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540020	SL	0	56.2	138.3	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540020	SL	121.34	16.4	1.66	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540020	SL	7.28	5.67	4.82	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540020	SL	41.2	5.56	1.28	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540020	SL	123.78	16.77	2.28	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540020	SL	40.66	5.51	0.77	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540020	SL	68.6	11.8	0.68	, , , , , , J, ,	J	pCi/g
	Thorium-230	HSL-300	30175540020	SL	23.6	4.57	0.21	, , , , , , J, ,	J	pCi/g
	Thorium-232	HSL-300	30175540020	SL	68.6	11.8	0.21	, , , , , , J, ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540020	SL	38.02	12.73	29.29	, , , , , , , ,		pCi/g
	U-233/234	HSL-300	30175540020	SL	34.4	5.92	0.12	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540020	SL	2.07	0.6	0.16	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540020	SL	5.04	1.08	0.94	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540020	SL	37.5	6.44	0.12	, , , , , , , ,		pCi/g
N002-SB003-0612-01										
	Bismuth-212	EPA 901.1	30175540021	SL	9.32	2.61	2.84	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540021	SL	0.14	0.19	0.19	, , J, , , , , ,	J	pCi/g
	Lead-210	EPA 901.1	30175540021	SL	9	32.94	40.46	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540021	SL	8.66	1.28	0.46	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540021	SL	21.21	3.92	1.47	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540021	SL	2.76	0.53	0.38	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540021	SL	8.65	1.44	0.57	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thallium-208	EPA 901.1	30175540021	SL	3.17	0.51	0.18	, , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540021	SL	7.9	2.45	1.49	, , , , , J, ,	J	pCi/g
	Thorium-230	HSL-300	30175540021	SL	3.18	1.38	0.67	, , , , , J, ,	J	pCi/g
	Thorium-232	HSL-300	30175540021	SL	6.75	2.15	0.36	, , , , , J, ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540021	SL	6.25	7.22	8.62	, , J, , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540021	SL	2.97	0.61	0.1	, , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540021	SL	0.14	0.1	0.09	J1+, , , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540021	SL	0.65	0.24	0.24	, , R, , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540021	SL	2.97	0.61	0.04	, , , , , , ,		pCi/g
N002-SB003-1218-01										
	Bismuth-212	EPA 901.1	30175540022	SL	4	2.95	2.95	, , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540022	SL	0.07	0.19	0.22	, , U, , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540022	SL	0	1.5	6.42	, , U, , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540022	SL	2.19	0.43	0.28	, , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540022	SL	26.42	5.15	1.51	, , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540022	SL	1.75	0.42	0.23	, , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540022	SL	2.6	0.57	0.41	, , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540022	SL	0.76	0.23	0.17	, , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540022	SL	2.55	0.88	0.64	, , , , , J, ,	J	pCi/g
	Thorium-230	HSL-300	30175540022	SL	1.43	0.6	0.3	, , , , , J, ,	J	pCi/g
	Thorium-232	HSL-300	30175540022	SL	1.84	0.69	0.15	, , , , , J, ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540022	SL	1.53	1.64	3.92	, , U, , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540022	SL	1.21	0.32	0.13	, , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540022	SL	0.15	0.1	0.05	, , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540022	SL	0.25	0.28	0.24	, , R, , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540022	SL	1.21	0.32	0.12	, , , , , , ,		pCi/g
N002-SB003-1824-01										

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Bismuth-212	EPA 901.1	30175540023	SL	1.96	2.4	2.14	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540023	SL	0	0.02	0.18	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540023	SL	2.1	19.21	24.49	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540023	SL	1.66	0.39	0.29	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540023	SL	27.65	4.84	1.58	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540023	SL	1.16	0.3	0.42	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540023	SL	1.93	0.48	0.19	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540023	SL	0.62	0.2	0.15	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540023	SL	1.16	0.56	0.57	, , , , , , J, ,	J	pCi/g
	Thorium-230	HSL-300	30175540023	SL	0.84	0.45	0.41	, , , , , , J, ,	J	pCi/g
	Thorium-232	HSL-300	30175540023	SL	1.84	0.68	0.28	, , , , , , J, ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540023	SL	1.06	3.97	5.03	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540023	SL	1.15	0.31	0.11	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540023	SL	0.05	0.07	0.12	J1+, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540023	SL	0.12	0.17	0.2	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540023	SL	0.84	0.26	0.1	, , , , , , , ,		pCi/g
N002-SB003-2430-01										
	Bismuth-212	EPA 901.1	30175540024	SL	1.08	1.21	3.43	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540024	SL	0	0.08	0.26	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540024	SL	3	4.8	6.16	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540024	SL	1.42	0.36	0.34	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540024	SL	24.16	5.06	1.75	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540024	SL	1.38	0.4	0.18	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540024	SL	1.7	0.65	0.48	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540024	SL	0.41	0.18	0.18	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540024	SL	1.06	0.41	0.38	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540024	SL	1.02	0.38	0.2	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thorium-232	HSL-300	30175540024	SL	1.05	0.38	0.14	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540024	SL	3.74	2.26	2.62	, , , , , , , ,		pCi/g
	U-233/234	HSL-300	30175540024	SL	0.98	0.29	0.13	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540024	SL	0.04	0.07	0.05	J1+, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540024	SL	0.33	0.17	0.19	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540024	SL	1.29	0.34	0.04	, , , , , , , ,		pCi/g
N002-SB003-3036-01										
	Bismuth-212	EPA 901.1	30175540025	SL	-0.03	2.96	3.09	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540025	SL	0.01	0.17	0.18	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540025	SL	-6.07	24.88	31.2	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540025	SL	1.03	0.27	0.28	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540025	SL	20.84	4.16	1.8	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540025	SL	1.22	0.33	0.32	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540025	SL	1.03	0.56	0.71	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540025	SL	0.47	0.1	0.13	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540025	SL	1.37	0.44	0.3	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540025	SL	0.85	0.32	0.19	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540025	SL	0.9	0.33	0.07	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540025	SL	0	1.75	6.5	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540025	SL	0.88	0.27	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540025	SL	0.04	0.07	0.06	J1+, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540025	SL	0.26	0.15	0.16	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540025	SL	0.91	0.27	0.09	, , , , , , , ,		pCi/g
N002-SB003-3642-01										
	Bismuth-212	EPA 901.1	30175540026	SL	1.68	0.99	0.92	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540026	SL	0	0.02	0.2	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540026	SL	1.66	3.69	4.81	, , U, , , , , ,	U	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Lead-212	EPA 901.1	30175540026	SL	1.35	0.32	0.27	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540026	SL	21.83	4.4	1.4	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540026	SL	1.47	0.38	0.2	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540026	SL	0.82	0.63	0.93	, , J, , , , , ,	J	pCi/g
	Thallium-208	EPA 901.1	30175540026	SL	0.46	0.16	0.14	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540026	SL	1.64	0.61	0.44	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540026	SL	0.87	0.41	0.22	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540026	SL	1.19	0.49	0.22	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540026	SL	1.96	2.23	3.3	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540026	SL	1.13	0.3	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540026	SL	0.05	0.07	0.09	J1+, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540026	SL	0.21	0.12	0.15	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540026	SL	0.95	0.27	0.04	, , , , , , , ,		pCi/g
N002-SB003-4248-01										
	Bismuth-212	EPA 901.1	30175540027	SL	1.61	1.05	1.48	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540027	SL	0	0.01	0.17	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540027	SL	6.87	16.52	20.61	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540027	SL	1.06	0.25	0.24	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540027	SL	20.64	3.54	0.72	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540027	SL	1.3	0.3	0.23	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540027	SL	1.57	0.37	0.29	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540027	SL	0.54	0.16	0.11	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540027	SL	1.5	0.57	0.45	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540027	SL	1.21	0.48	0.21	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540027	SL	0.71	0.36	0.11	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540027	SL	0.68	4.14	5.21	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540027	SL	0.92	0.27	0.1	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	U-235/236	HSL-300	30175540027	SL	0.03	0.07	0.13	J1+, , U, , , , , ,	UJ	pCi/g
	Uranium-235	EPA 901.1	30175540027	SL	0.1	0.15	0.18	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540027	SL	0.71	0.23	0.06	, , , , , , , ,		pCi/g
N002-SB004-0006-01										
	Bismuth-212	EPA 901.1	30175540028	SL	100.35	16.79	8.21	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540028	SL	0.14	0.61	0.66	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540028	SL	25.44	12.62	15.98	, , , , , , , ,		pCi/g
	Lead-212	EPA 901.1	30175540028	SL	83.33	11.32	1.21	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540028	SL	1.92	5.74	5.46	, , U, , , , , ,	U	pCi/g
	Radium-226	EPA 901.1	30175540028	SL	36.74	5.02	1.2	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540028	SL	85.23	11.54	1.68	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540028	SL	28.39	3.9	0.64	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540028	SL	41.1	7.35	0.74	, , , , , , J, ,	J	pCi/g
	Thorium-230	HSL-300	30175540028	SL	16	3.29	0.48	, , , , , , J, ,	J	pCi/g
	Thorium-232	HSL-300	30175540028	SL	38.9	6.98	0.42	, , , , , , J, ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540028	SL	27.68	8.28	11.59	, , , , , , , ,		pCi/g
	U-233/234	HSL-300	30175540028	SL	21.3	3.6	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540028	SL	1.45	0.43	0.06	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540028	SL	4.99	1.04	0.84	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540028	SL	22	3.71	0.11	, , , , , , , ,		pCi/g
N002-SB004-0612-01										
	Bismuth-212	EPA 901.1	30175540029	SL	2.12	1.58	1.57	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540029	SL	0.06	0.14	0.16	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540029	SL	1.05	3.83	5.05	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540029	SL	1.94	0.39	0.26	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540029	SL	22.24	4.44	1.38	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540029	SL	1.31	0.34	0.2	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Radium-228	EPA 901.1	30175540029	SL	1.98	0.58	0.75	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540029	SL	0.68	0.2	0.14	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540029	SL	1.51	0.84	0.92	, , , , , , J, ,	J	pCi/g
	Thorium-230	HSL-300	30175540029	SL	0.85	0.57	0.26	, , , , , , J, ,	J	pCi/g
	Thorium-232	HSL-300	30175540029	SL	1.52	0.78	0.26	, , , , , , J, ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540029	SL	1.69	2.53	3.17	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540029	SL	0.87	0.26	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540029	SL	0.14	0.1	0.09	J1+, , , , , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540029	SL	0.32	0.27	0.2	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540029	SL	1.06	0.29	0.08	, , , , , , , ,		pCi/g
N002-SB004-1218-01										
	Bismuth-212	EPA 901.1	30175540030	SL	1.03	1.71	1.75	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540030	SL	0	0.02	0.17	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540030	SL	0.65	21.09	26.81	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540030	SL	1.37	0.31	0.28	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540030	SL	22.26	4.5	2.27	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540030	SL	1.4	0.34	0.19	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540030	SL	1.69	0.48	0.28	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540030	SL	0.47	0.15	0.12	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540030	SL	1.55	0.69	0.62	, , , , , , J, ,	J	pCi/g
	Thorium-230	HSL-300	30175540030	SL	0.93	0.51	0.45	, , , , , , J, ,	J	pCi/g
	Thorium-232	HSL-300	30175540030	SL	0.97	0.51	0.31	, , , , , , J, ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540030	SL	1.16	4.38	5.5	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540030	SL	0.8	0.24	0.08	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540030	SL	0.09	0.08	0.05	J1+, , , , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540030	SL	0.09	0.14	0.17	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540030	SL	0.98	0.28	0.04	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
N002-SB004-1824-01										
	Bismuth-212	EPA 901.1	30175540031	SL	1.33	2.33	2.6	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540031	SL	0	0.08	0.18	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540031	SL	3.4	2.68	3.58	, , J, , , , , ,	J	pCi/g
	Lead-212	EPA 901.1	30175540031	SL	1.26	0.3	0.24	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540031	SL	19.47	4.15	1.5	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540031	SL	1.5	0.29	0.15	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540031	SL	1.22	0.58	0.62	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540031	SL	0.51	0.16	0.1	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540031	SL	0.84	0.36	0.37	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540031	SL	0.78	0.32	0.12	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540031	SL	0.92	0.35	0.08	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540031	SL	1.69	2.35	2.96	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540031	SL	0.92	0.25	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540031	SL	0.1	0.08	0.04	J1+, , , , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540031	SL	0.14	0.12	0.16	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540031	SL	1	0.27	0.07	, , , , , , , ,		pCi/g
N002-SB004-2430-01										
	Bismuth-212	EPA 901.1	30175540032	SL	2.2	1.49	2.09	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540032	SL	0.01	0.14	0.16	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540032	SL	6.68	21.69	27.17	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540032	SL	1.18	0.28	0.27	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540032	SL	20.94	4.21	1.93	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540032	SL	1.26	0.34	0.21	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540032	SL	1.95	0.49	0.2	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540032	SL	0.54	0.15	0.11	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540032	SL	1.18	0.39	0.25	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thorium-230	HSL-300	30175540032	SL	0.73	0.29	0.16	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540032	SL	0.92	0.32	0.06	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540032	SL	2.3	2.57	6.12	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540032	SL	1.1	0.33	0.11	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540032	SL	0.09	0.1	0.12	J1+, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540032	SL	0.2	0.17	0.19	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540032	SL	1.45	0.39	0.09	, , , , , , , ,		pCi/g
N002-SB004-3036-01										
	Bismuth-212	EPA 901.1	30175540033	SL	2.21	1.58	1.54	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540033	SL	0	0.02	0.2	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540033	SL	1.16	3.62	4.77	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540033	SL	1.37	0.31	0.26	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540033	SL	21.86	4.37	1.36	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540033	SL	1.28	0.36	0.19	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540033	SL	1.62	0.43	0.37	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540033	SL	0.38	0.25	0.24	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540033	SL	1.07	0.43	0.26	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540033	SL	1.01	0.41	0.21	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540033	SL	0.84	0.37	0.18	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540033	SL	0.72	2.31	2.98	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540033	SL	0.88	0.26	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540033	SL	0.12	0.1	0.09	J1+, , , , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540033	SL	0.23	0.23	0.18	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540033	SL	0.93	0.26	0.07	, , , , , , , ,		pCi/g
N002-SB004-3642-01										
	Bismuth-212	EPA 901.1	30175540034	SL	2.44	1.45	1.93	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540034	SL	0	0.12	0.14	, , U, , , , , ,	U	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Lead-210	EPA 901.1	30175540034	SL	-4.39	21.13	26.46	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540034	SL	1.15	0.26	0.22	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540034	SL	23.8	4	0.76	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540034	SL	1.47	0.35	0.2	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540034	SL	1.18	0.36	0.41	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540034	SL	0.49	0.14	0.1	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540034	SL	1.17	0.42	0.32	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540034	SL	1.11	0.39	0.17	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540034	SL	0.95	0.36	0.08	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540034	SL	1.86	2.89	4.8	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540034	SL	1.15	0.32	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540034	SL	0.13	0.1	0.06	J1+, , , , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540034	SL	0.12	0.17	0.2	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540034	SL	1.15	0.32	0.04	, , , , , , , ,		pCi/g
N002-SB004-4248-01										
	Bismuth-212	EPA 901.1	30175540035	SL	0	1.61	3.43	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540035	SL	0.03	0.14	0.17	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540035	SL	2.24	3.83	4.94	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540035	SL	1.24	0.29	0.22	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540035	SL	21.03	4.35	1.47	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540035	SL	1.37	0.32	0.29	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540035	SL	1.78	0.6	0.4	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540035	SL	0.53	0.18	0.13	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540035	SL	0.87	0.29	0.18	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540035	SL	0.84	0.28	0.09	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540035	SL	0.86	0.28	0.09	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540035	SL	0.11	2.89	3.74	, , U, , , , , ,	U	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	U-233/234	HSL-300	30175540035	SL	0.55	0.2	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540035	SL	0.07	0.07	0.05	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540035	SL	0.23	0.16	0.19	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540035	SL	0.87	0.26	0.04	, , , , , , , ,		pCi/g
N002-SB005-0006-01										
	Bismuth-212	EPA 901.1	30175540036	SL	474.08	64.62	10.8	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540036	SL	0	0.27	0.84	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540036	SL	118.93	105.75	130	, , J, , , , , ,	J	pCi/g
	Lead-212	EPA 901.1	30175540036	SL	427.88	63.18	2	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540036	SL	4.74	3.82	6.16	, , J, , , , , ,	J	pCi/g
	Radium-226	EPA 901.1	30175540036	SL	125.6	17.18	1.54	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540036	SL	437.8	58.2	2.97	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540036	SL	143.42	19.62	0.89	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540036	SL	114	19.5	0.63	, , , , , , , M,	J	pCi/g
	Thorium-230	HSL-300	30175540036	SL	34.2	6.76	0.53	, , , , , , , M,	J	pCi/g
	Thorium-232	HSL-300	30175540036	SL	103	17.7	0.47	, , , , , , , M,	J	pCi/g
	Thorium-234	EPA 901.1	30175540036	SL	117.74	18.97	27.45	, , , , , , , ,		pCi/g
	U-233/234	HSL-300	30175540036	SL	137	28.3	0.43	, , , , , , J, ,	J	pCi/g
	U-235/236	HSL-300	30175540036	SL	7.01	2.02	0.38	, , , , , , J, ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540036	SL	15.25	2.42	1.08	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540036	SL	140	29	0.29	, , , , , , J, ,	J	pCi/g
N002-SB005-0612-01										
	Bismuth-212	EPA 901.1	30175540037	SL	6.41	1.92	0.84	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540037	SL	0	0.04	0.24	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540037	SL	3.7	3.96	4.94	, , J, , , , , ,	J	pCi/g
	Lead-212	EPA 901.1	30175540037	SL	4.53	0.74	0.33	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540037	SL	26.78	4.98	1.28	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Radium-226	EPA 901.1	30175540037	SL	2.33	0.49	0.26	, , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540037	SL	4.33	0.82	0.47	, , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540037	SL	1.68	0.34	0.16	, , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540037	SL	3.64	0.84	0.26	, , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540037	SL	1.89	0.52	0.17	, , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540037	SL	2.77	0.68	0.15	, , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540037	SL	3.64	2.61	3.54	, , , , , , ,		pCi/g
	U-233/234	HSL-300	30175540037	SL	1.86	0.42	0.1	, , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540037	SL	0.02	0.06	0.05	, , U, , , , ,	U	pCi/g
	Uranium-235	EPA 901.1	30175540037	SL	0.27	0.16	0.18	, , R, , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540037	SL	2.21	0.48	0.08	, , , , , , ,		pCi/g
N002-SB005-1218-01										
	Bismuth-212	EPA 901.1	30175540038	SL	3.9	1.57	1.11	, , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540038	SL	0	0.02	0.15	, , U, , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540038	SL	-11.39	24.64	30.19	, , U, , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540038	SL	1.9	0.37	0.28	, , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540038	SL	28.73	4.82	1.39	, , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540038	SL	1.79	0.4	0.24	, , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540038	SL	2.37	0.52	0.17	, , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540038	SL	0.92	0.22	0.14	, , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540038	SL	1.75	0.53	0.28	, , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540038	SL	1.3	0.43	0.08	, , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540038	SL	1.24	0.42	0.08	, , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540038	SL	1.86	1.72	6	, , U, , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540038	SL	1.17	0.33	0.1	, , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540038	SL	0.04	0.08	0.1	, , J, , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540038	SL	0.07	0.16	0.19	, , R, , , , ,	R	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Uranium-238	HSL-300	30175540038	SL	1.26	0.34	0.08	, , , , , , ,		pCi/g
N002-SB005-1824-01										
	Bismuth-212	EPA 901.1	30175540039	SL	1.62	1.31	3.21	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540039	SL	0.01	0.17	0.2	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540039	SL	0.55	3.76	4.98	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540039	SL	1.92	0.37	0.23	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540039	SL	24.54	4.67	1.29	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540039	SL	1.66	0.36	0.27	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540039	SL	2.08	0.55	0.7	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540039	SL	0.76	0.23	0.17	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540039	SL	1.69	0.51	0.27	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540039	SL	1.01	0.37	0.2	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540039	SL	1.28	0.42	0.14	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540039	SL	2.33	1.71	2.42	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540039	SL	0.99	0.28	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540039	SL	0.07	0.07	0.09	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540039	SL	0.2	0.17	0.18	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540039	SL	1.11	0.3	0.07	, , , , , , , ,		pCi/g
N002-SB005-2430-01										
	Bismuth-212	EPA 901.1	30175540040	SL	3.28	1.79	1.55	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540040	SL	0.04	0.17	0.19	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540040	SL	-2.98	25.81	32.6	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540040	SL	1.1	0.28	0.28	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540040	SL	17.37	3.53	1.45	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540040	SL	1.33	0.32	0.21	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540040	SL	1.66	0.5	0.53	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540040	SL	0.5	0.14	0.08	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thorium-228	HSL-300	30175540040	SL	1.66	0.47	0.29	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540040	SL	1.37	0.4	0.09	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540040	SL	1.52	0.43	0.06	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540040	SL	0	3.06	6.87	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540040	SL	1.15	0.3	0.07	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540040	SL	0.14	0.1	0.09	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540040	SL	0.18	0.19	0.22	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540040	SL	1.27	0.32	0.07	, , , , , , , ,		pCi/g
N002-SB005-3036-01										
	Bismuth-212	EPA 901.1	30175540041	SL	0	1.23	3.46	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540041	SL	0	0.02	0.23	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540041	SL	2.05	2.98	3.83	, , J, , , , , ,	J	pCi/g
	Lead-212	EPA 901.1	30175540041	SL	1.21	0.27	0.2	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540041	SL	20.81	4.17	1.3	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540041	SL	1.42	0.32	0.13	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540041	SL	1.69	0.5	0.36	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540041	SL	0.35	0.13	0.11	J1+, , , , , , , ,	J	pCi/g
	Thorium-228	HSL-300	30175540041	SL	1.67	0.45	0.2	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540041	SL	1.05	0.33	0.13	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540041	SL	1.08	0.33	0.05	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540041	SL	1.79	1.69	3.28	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540041	SL	0.81	0.23	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540041	SL	0.03	0.06	0.08	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540041	SL	0.19	0.14	0.16	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540041	SL	0.97	0.26	0.03	, , , , , , , ,		pCi/g
N002-SB005-3642-01										
	Bismuth-212	EPA 901.1	30175540042	SL	2.61	1.54	1.76	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Cesium-137	EPA 901.1	30175540042	SL	0	0.01	0.13	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540042	SL	2.46	17.13	21.78	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540042	SL	0.95	0.24	0.24	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540042	SL	20.93	3.8	1.36	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540042	SL	1.38	0.33	0.27	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540042	SL	0.93	0.38	0.56	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540042	SL	0.35	0.12	0.11	J1+, , , , , , , ,	J	pCi/g
	Thorium-228	HSL-300	30175540042	SL	0.85	0.32	0.19	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540042	SL	1	0.35	0.15	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540042	SL	0.95	0.34	0.13	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540042	SL	0	1.85	5.51	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540042	SL	0.71	0.23	0.13	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540042	SL	0.08	0.08	0.05	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540042	SL	0.06	0.16	0.19	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540042	SL	0.99	0.28	0.12	, , , , , , , ,		pCi/g
N002-SB005-4248-01										
	Bismuth-212	EPA 901.1	30175540043	SL	2.67	1.71	1.93	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540043	SL	0	0.02	0.17	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540043	SL	0.81	2.87	3.84	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540043	SL	1.29	0.3	0.26	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540043	SL	20.98	4.2	1.31	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540043	SL	1.26	0.37	0.21	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540043	SL	1.45	0.44	0.36	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540043	SL	0.42	0.15	0.13	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540043	SL	1.15	0.36	0.22	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540043	SL	0.87	0.29	0.1	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540043	SL	0.96	0.31	0.05	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thorium-234	EPA 901.1	30175540043	SL	2.33	1.51	2.26	, , , , , , ,		pCi/g
	U-233/234	HSL-300	30175540043	SL	0.78	0.23	0.1	, , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540043	SL	0.01	0.06	0.1	, , U, , , , ,	U	pCi/g
	Uranium-235	EPA 901.1	30175540043	SL	0.22	0.15	0.17	, , R, , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540043	SL	0.84	0.24	0.09	, , , , , , ,		pCi/g
N002-SB006-0006-01										
	Bismuth-212	EPA 901.1	30175540044	SL	161.77	23.05	9.02	, , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540044	SL	-0.26	0.72	0.73	, , U, , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540044	SL	77.88	125.52	149.5	, , J, , , , ,	J	pCi/g
	Lead-212	EPA 901.1	30175540044	SL	149.22	20.13	1.82	, , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540044	SL	8.05	6.03	5.1	, , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540044	SL	39.14	5.36	1.3	, , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540044	SL	150.13	20.04	2.17	, , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540044	SL	50.04	6.72	0.77	, , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540044	SL	59.1	9.62	0.22	, , , , , , , M,	J	pCi/g
	Thorium-230	HSL-300	30175540044	SL	20.1	3.43	0.12	, , , , , , , M,	J	pCi/g
	Thorium-232	HSL-300	30175540044	SL	59.9	9.75	0.06	, , , , , , , M,	J	pCi/g
	Thorium-234	EPA 901.1	30175540044	SL	62.78	16.09	28.18	, , , , , , ,		pCi/g
	U-233/234	HSL-300	30175540044	SL	31.5	5.48	0.2	, , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540044	SL	1.76	0.54	0.08	, , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540044	SL	6.73	1.33	1.07	, , R, , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540044	SL	32.4	5.63	0.06	, , , , , , ,		pCi/g
N002-SB006-0612-01										
	Bismuth-212	EPA 901.1	30175540045	SL	0.72	0.55	2.29	, , U, , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540045	SL	0.06	0.09	0.09	, , J, , , , ,	J	pCi/g
	Lead-210	EPA 901.1	30175540045	SL	6.46	14.86	18.58	, , U, , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540045	SL	0.76	0.21	0.22	, , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Potassium-40	EPA 901.1	30175540045	SL	10.45	2.39	1.35	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540045	SL	1.17	0.24	0.15	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540045	SL	1.11	0.32	0.26	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540045	SL	0.28	0.1	0.08	J1+, , , , , , , ,	J	pCi/g
	Thorium-228	HSL-300	30175540045	SL	1.5	0.53	0.32	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540045	SL	0.73	0.34	0.1	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540045	SL	0.87	0.38	0.1	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540045	SL	2.94	2.73	3.8	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540045	SL	0.96	0.28	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540045	SL	0.06	0.07	0.05	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540045	SL	0.25	0.14	0.14	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540045	SL	0.88	0.26	0.09	, , , , , , , ,		pCi/g
N002-SB006-1218-01										
	Bismuth-212	EPA 901.1	30175540046	SL	0.52	3.03	3.45	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540046	SL	0.06	0.16	0.19	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540046	SL	4.27	3.26	3.9	, , , , , , , ,		pCi/g
	Lead-212	EPA 901.1	30175540046	SL	1.1	0.31	0.32	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540046	SL	29.62	5.69	1.6	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540046	SL	1.7	0.42	0.23	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540046	SL	1.89	0.58	0.64	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540046	SL	0.58	0.22	0.19	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540046	SL	1.27	0.42	0.29	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540046	SL	1.63	0.48	0.13	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540046	SL	0.9	0.33	0.07	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540046	SL	5.35	2.11	2.9	, , , , , , , ,		pCi/g
	U-233/234	HSL-300	30175540046	SL	1.46	0.37	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540046	SL	0.05	0.07	0.1	, , J, , , , , ,	J	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Uranium-235	EPA 901.1	30175540046	SL	0.31	0.14	0.16	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540046	SL	1.57	0.39	0.04	, , , , , , , ,		pCi/g
N002-SB006-1824-01										
	Bismuth-212	EPA 901.1	30175540047	SL	1.79	1.93	1.91	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540047	SL	0	0.06	0.2	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540047	SL	2.84	20.09	25.59	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540047	SL	1.3	0.31	0.29	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540047	SL	31.54	5.37	1.45	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540047	SL	1.32	0.36	0.31	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540047	SL	1.35	0.54	0.43	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540047	SL	0.58	0.16	0.1	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540047	SL	1.27	0.46	0.35	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540047	SL	1	0.38	0.17	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540047	SL	1.13	0.4	0.08	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540047	SL	0.64	4.9	6.19	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540047	SL	0.96	0.26	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540047	SL	0.06	0.07	0.11	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540047	SL	0.12	0.18	0.21	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540047	SL	0.99	0.27	0.05	, , , , , , , ,		pCi/g
N002-SB006-2430-01										
	Bismuth-212	EPA 901.1	30175540048	SL	1.34	1.67	2.4	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540048	SL	0.07	0.16	0.19	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540048	SL	2.4	4.33	5.6	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540048	SL	1.5	0.34	0.23	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540048	SL	27.24	5.38	1.63	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540048	SL	1.86	0.44	0.27	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540048	SL	1.02	0.45	0.89	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thallium-208	EPA 901.1	30175540048	SL	0.64	0.18	0.1	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540048	SL	1.02	0.35	0.25	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540048	SL	0.99	0.34	0.18	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540048	SL	1.12	0.36	0.12	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540048	SL	2.16	2.52	3.63	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540048	SL	1.03	0.29	0.07	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540048	SL	0	0.07	0.05	, , U, , , , , ,	U	pCi/g
	Uranium-235	EPA 901.1	30175540048	SL	0.27	0.21	0.2	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540048	SL	1.12	0.3	0.08	, , , , , , , ,		pCi/g
N002-SB006-3036-01										
	Bismuth-212	EPA 901.1	30175540049	SL	1.34	2.58	2.64	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540049	SL	0.02	0.13	0.14	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540049	SL	6.86	21.82	27.43	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540049	SL	1.26	0.29	0.25	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540049	SL	21.65	4.06	1.41	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540049	SL	1.24	0.33	0.26	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540049	SL	1.42	0.47	0.54	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540049	SL	0.32	0.13	0.12	J1+, , , , , , , ,	J	pCi/g
	Thorium-228	HSL-300	30175540049	SL	1.07	0.35	0.27	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540049	SL	0.78	0.28	0.14	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540049	SL	0.92	0.3	0.1	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540049	SL	1.24	2.08	5.66	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540049	SL	0.93	0.27	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540049	SL	0.03	0.07	0.09	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540049	SL	0.15	0.17	0.2	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540049	SL	0.91	0.26	0.08	, , , , , , , ,		pCi/g
N002-SB006-3642-01										

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Bismuth-212	EPA 901.1	30175540050	SL	1.32	1.76	2.74	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540050	SL	0.03	0.08	0.11	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540050	SL	1.2	3.74	4.93	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540050	SL	1.44	0.32	0.24	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540050	SL	20.28	4.18	1.4	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540050	SL	1.33	0.34	0.14	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540050	SL	1.21	0.58	0.6	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540050	SL	0.5	0.15	0.09	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540050	SL	1.24	0.38	0.24	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540050	SL	0.62	0.24	0.15	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540050	SL	0.62	0.24	0.05	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540050	SL	2.3	2.42	2.98	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540050	SL	0.94	0.26	0.08	, , , , , , J, ,	J	pCi/g
	U-235/236	HSL-300	30175540050	SL	0	0.06	0.04	, , U, , , , J, ,	UJ	pCi/g
	Uranium-235	EPA 901.1	30175540050	SL	0.1	0.15	0.19	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540050	SL	1	0.27	0.03	, , , , , , J, ,	J	pCi/g
N002-SB006-4248-01										
	Bismuth-212	EPA 901.1	30175540051	SL	0.98	1.62	1.67	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540051	SL	0	0.01	0.18	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540051	SL	-13.52	23.52	28.72	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540051	SL	1.12	0.25	0.2	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540051	SL	21.01	3.87	1.44	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540051	SL	1.36	0.3	0.21	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540051	SL	1.5	0.45	0.28	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540051	SL	0.4	0.16	0.13	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540051	SL	1.38	0.42	0.23	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540051	SL	0.8	0.29	0.11	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thorium-232	HSL-300	30175540051	SL	1.04	0.34	0.11	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540051	SL	1.01	4.22	5.31	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540051	SL	0.73	0.22	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540051	SL	0.05	0.06	0.05	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540051	SL	0.22	0.14	0.16	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540051	SL	1.09	0.29	0.08	, , , , , , , ,		pCi/g
N002-SB007-0006-01										
	Bismuth-212	EPA 901.1	30175540052	SL	280.64	31.99	10.68	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540052	SL	0	0.28	0.82	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540052	SL	28.53	11.98	18.67	, , , , , , , ,		pCi/g
	Lead-212	EPA 901.1	30175540052	SL	257.94	30.45	1.71	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540052	SL	14.5	6.94	6.13	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540052	SL	63.72	7.1	1.51	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540052	SL	268.39	29.02	2.99	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540052	SL	81.01	8.9	0.97	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540052	SL	68.3	11.2	0.31	, , , , , , , M,	J	pCi/g
	Thorium-230	HSL-300	30175540052	SL	31.9	5.41	0.2	, , , , , , , M,	J	pCi/g
	Thorium-232	HSL-300	30175540052	SL	67.6	11.1	0.17	, , , , , , , M,	J	pCi/g
	Thorium-234	EPA 901.1	30175540052	SL	38.29	9.11	12.79	, , , , , , , ,		pCi/g
	U-233/234	HSL-300	30175540052	SL	43.4	7.91	0.19	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540052	SL	1.97	0.66	0.21	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540052	SL	8.64	1.3	0.92	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540052	SL	45.4	8.26	0.16	, , , , , , , ,		pCi/g
N002-SB007-0612-01										
	Bismuth-212	EPA 901.1	30175540053	SL	14.42	4.38	3.4	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540053	SL	0.1	0.24	0.27	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540053	SL	1.75	6.42	8.28	, , U, , , , , ,	U	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Lead-212	EPA 901.1	30175540053	SL	11.07	1.63	0.46	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540053	SL	17.16	3.75	1.42	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540053	SL	4.16	0.8	0.4	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540053	SL	10.53	1.71	0.56	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540053	SL	3.53	0.6	0.18	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540053	SL	7.51	1.45	0.23	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540053	SL	2.51	0.62	0.06	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540053	SL	6.76	1.33	0.06	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540053	SL	2.06	3.75	5.78	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540053	SL	3.59	0.73	0.12	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540053	SL	0.26	0.15	0.1	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540053	SL	0.51	0.3	0.33	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540053	SL	3.82	0.77	0.08	, , , , , , , ,		pCi/g
N002-SB007-1218-01										
	Bismuth-212	EPA 901.1	30175540054	SL	1.17	2.54	2.6	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540054	SL	0	0.06	0.2	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540054	SL	13.43	20.79	25.44	, , J, , , , , ,	J	pCi/g
	Lead-212	EPA 901.1	30175540054	SL	1.32	0.29	0.23	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540054	SL	27.55	4.76	1.33	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540054	SL	1.62	0.36	0.34	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540054	SL	1.88	0.53	0.31	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540054	SL	0.53	0.16	0.13	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540054	SL	1.33	0.55	0.44	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540054	SL	1.11	0.48	0.32	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540054	SL	1.14	0.48	0.22	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540054	SL	3.49	4.31	5.24	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540054	SL	1.41	0.35	0.07	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	U-235/236	HSL-300	30175540054	SL	0.18	0.12	0.09	, , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540054	SL	0.15	0.16	0.19	, , R, , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540054	SL	1.27	0.33	0.07	, , , , , , ,		pCi/g
N002-SB007-1824-01										
	Bismuth-212	EPA 901.1	30175540055	SL	4.07	1.63	1.02	, , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540055	SL	0	0.05	0.23	, , U, , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540055	SL	1.33	3.96	5.23	, , U, , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540055	SL	1.6	0.37	0.33	, , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540055	SL	28.05	5.42	1.56	, , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540055	SL	1.51	0.38	0.16	, , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540055	SL	1.64	0.58	0.42	, , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540055	SL	0.55	0.22	0.19	, , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540055	SL	1.23	0.48	0.4	J1+, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540055	SL	0.9	0.39	0.22	, , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540055	SL	0.77	0.35	0.1	, , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540055	SL	1.27	2.64	3.36	, , U, , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540055	SL	0.65	0.22	0.13	, , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540055	SL	0.06	0.07	0.05	, , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540055	SL	0.27	0.17	0.19	, , R, , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540055	SL	1.16	0.31	0.04	, , , , , , ,		pCi/g
N002-SB007-2430-01										
	Bismuth-212	EPA 901.1	30175540056	SL	1.46	1.78	1.8	, , J, , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540056	SL	0.08	0.08	0.08	, , J, , , , ,	J	pCi/g
	Lead-210	EPA 901.1	30175540056	SL	-1.01	23.57	30.03	, , U, , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540056	SL	1.27	0.3	0.29	, , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540056	SL	21.17	4.06	1.49	, , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540056	SL	1.36	0.28	0.24	, , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Radium-228	EPA 901.1	30175540056	SL	1.51	0.52	0.54	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540056	SL	0.3	0.18	0.18	J1+, , , , , , , ,	J	pCi/g
	Thorium-228	HSL-300	30175540056	SL	1.42	0.42	0.2	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540056	SL	1.12	0.36	0.06	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540056	SL	0.96	0.32	0.06	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540056	SL	3.17	2.22	6.2	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540056	SL	1.39	0.35	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540056	SL	0.16	0.11	0.05	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540056	SL	0.27	0.2	0.21	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540056	SL	1.46	0.37	0.09	, , , , , , , ,		pCi/g
N002-SB007-3036-01										
	Bismuth-212	EPA 901.1	30175540057	SL	2.25	2.19	2.3	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540057	SL	0	0.17	0.21	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540057	SL	3.13	3.31	4.14	, , J, , , , , ,	J	pCi/g
	Lead-212	EPA 901.1	30175540057	SL	1.2	0.29	0.24	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540057	SL	19.79	4.26	1.56	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540057	SL	1.47	0.39	0.28	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540057	SL	1.78	0.59	0.43	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540057	SL	0.28	0.24	0.26	J1+, , , , , , , ,	J	pCi/g
	Thorium-228	HSL-300	30175540057	SL	0.92	0.31	0.22	J1+, , , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540057	SL	0.92	0.3	0.1	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540057	SL	1.07	0.33	0.05	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540057	SL	2.72	2.2	3.1	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540057	SL	0.97	0.27	0.08	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540057	SL	0.08	0.08	0.09	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540057	SL	0.08	0.19	0.24	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540057	SL	0.96	0.27	0.04	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
N002-SB007-3642-01										
	Bismuth-212	EPA 901.1	30175540058	SL	1.63	1.35	1.71	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540058	SL	0	0.04	0.15	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540058	SL	2.12	18.9	24.04	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540058	SL	1.21	0.27	0.24	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540058	SL	20.38	3.58	0.8	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540058	SL	1.31	0.25	0.28	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540058	SL	1.47	0.46	0.39	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540058	SL	0.41	0.13	0.1	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540058	SL	1.13	0.36	0.23	J1+, , , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540058	SL	0.93	0.3	0.11	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540058	SL	0.99	0.32	0.05	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540058	SL	2.39	3.66	4.52	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540058	SL	1.09	0.3	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540058	SL	0.01	0.07	0.12	, , U, , , , , ,	U	pCi/g
	Uranium-235	EPA 901.1	30175540058	SL	0.25	0.16	0.16	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540058	SL	1.41	0.35	0.05	, , , , , , , ,		pCi/g
N002-SB007-4248-01										
	Bismuth-212	EPA 901.1	30175540059	SL	1.53	1.48	1.46	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540059	SL	0	0.04	0.15	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540059	SL	2.97	19.61	24.77	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540059	SL	1.28	0.28	0.23	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540059	SL	17.26	3.39	1.6	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540059	SL	1.27	0.32	0.21	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540059	SL	0.8	0.37	0.35	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540059	SL	0.51	0.14	0.09	, , , P1, , , , ,		pCi/g
	Thorium-228	HSL-300	30175540059	SL	1.15	0.37	0.23	J1+, , , , , , , ,	J	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thorium-230	HSL-300	30175540059	SL	0.8	0.29	0.17	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540059	SL	0.87	0.3	0.12	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540059	SL	2.14	1.66	4.74	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540059	SL	0.9	0.26	0.07	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540059	SL	0.04	0.07	0.05	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540059	SL	0.04	0.15	0.19	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540059	SL	0.83	0.25	0.08	, , , , , , , ,		pCi/g
N002-SB008-0006-01										
	Bismuth-212	EPA 901.1	30175540060	SL	9.83	3.12	2.3	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540060	SL	0.09	0.23	0.25	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540060	SL	3.67	5.02	6.32	, , J, , , , , ,	J	pCi/g
	Lead-212	EPA 901.1	30175540060	SL	7.99	1.19	0.36	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540060	SL	11.22	2.82	1.58	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540060	SL	3.12	0.62	0.31	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540060	SL	8.36	1.37	0.52	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540060	SL	2.75	0.5	0.22	, , , P1, , , , ,		pCi/g
	Thorium-228	HSL-300	30175540060	SL	5.55	1.12	0.29	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540060	SL	2.22	0.56	0.15	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540060	SL	6.6	1.28	0.11	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540060	SL	1.38	1.08	5.04	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540060	SL	2.6	0.58	0.12	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540060	SL	0.18	0.13	0.11	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540060	SL	0.48	0.22	0.24	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540060	SL	2.31	0.53	0.1	, , , , , , , ,		pCi/g
N002-SB008-0612-01										
	Bismuth-212	EPA 901.1	30175540061	SL	7.28	2.41	1.88	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540061	SL	0.06	0.18	0.19	, , U, , , , , ,	U	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Lead-210	EPA 901.1	30175540061	SL	3.1	30.61	38.13	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540061	SL	5.74	0.9	0.45	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540061	SL	22.18	4.07	1.35	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540061	SL	3.15	0.55	0.26	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540061	SL	6.74	1.28	0.61	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540061	SL	1.9	0.36	0.18	, , , P1, , , , ,		pCi/g
	Thorium-228	HSL-300	30175540061	SL	4.72	1.03	0.31	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540061	SL	2.7	0.68	0.2	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540061	SL	4.84	1.04	0.07	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540061	SL	4.66	4.98	7.66	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540061	SL	2.33	0.52	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540061	SL	0.14	0.1	0.05	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540061	SL	0.67	0.29	0.27	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540061	SL	1.8	0.43	0.04	, , , , , , , ,		pCi/g
N002-SB008-1218-01										
	Bismuth-212	EPA 901.1	30175540062	SL	1.72	1.82	2.35	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540062	SL	0	0.02	0.21	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540062	SL	2.42	3.74	4.82	, , J, , , , , ,	J	pCi/g
	Lead-212	EPA 901.1	30175540062	SL	1.96	0.41	0.28	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540062	SL	24.18	4.92	1.59	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540062	SL	1.56	0.43	0.28	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540062	SL	2.86	0.8	0.44	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540062	SL	0.62	0.23	0.2	, , , P1, , , , ,		pCi/g
	Thorium-228	HSL-300	30175540062	SL	1.41	0.43	0.24	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540062	SL	1	0.34	0.12	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540062	SL	1.34	0.41	0.12	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540062	SL	2.52	1.7	3.71	, , J, , , , , ,	J	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	U-233/234	HSL-300	30175540062	SL	0.91	0.25	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540062	SL	0.03	0.06	0.04	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540062	SL	0.21	0.24	0.22	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540062	SL	1.04	0.27	0.07	, , , , , , , ,		pCi/g
N002-SB008-1824-01										
	Bismuth-212	EPA 901.1	30175540063	SL	1.95	1.92	2.5	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540063	SL	0.06	0.17	0.2	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540063	SL	3.15	4.37	5.57	, , J, , , , , ,	J	pCi/g
	Lead-212	EPA 901.1	30175540063	SL	1.62	0.36	0.25	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540063	SL	21.63	4.64	1.7	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540063	SL	1.8	0.39	0.28	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540063	SL	1.23	0.48	1.03	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540063	SL	0.59	0.19	0.14	, , , P1, , , , ,		pCi/g
	Thorium-228	HSL-300	30175540063	SL	1.44	0.41	0.21	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540063	SL	1.02	0.32	0.1	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540063	SL	1.01	0.32	0.05	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540063	SL	0.54	2.82	3.67	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540063	SL	1.05	0.31	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540063	SL	0.02	0.08	0.11	, , U, , , , , ,	U	pCi/g
	Uranium-235	EPA 901.1	30175540063	SL	0.23	0.16	0.19	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540063	SL	1.02	0.31	0.09	, , , , , , , ,		pCi/g
N002-SB008-2430-01										
	Bismuth-212	EPA 901.1	30175540064	SL	2.38	1.85	1.76	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540064	SL	0.07	0.15	0.17	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540064	SL	-4.11	26.22	33.25	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540064	SL	1.19	0.31	0.3	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540064	SL	19.84	3.96	1.57	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Radium-226	EPA 901.1	30175540064	SL	1.41	0.4	0.46	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540064	SL	1.43	0.62	0.62	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540064	SL	0.53	0.2	0.15	, , , P1, , , , ,		pCi/g
	Thorium-228	HSL-300	30175540064	SL	1.09	0.35	0.21	J1+, , , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540064	SL	1.15	0.35	0.14	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540064	SL	0.95	0.31	0.12	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540064	SL	1.82	1.87	7.18	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540064	SL	1.07	0.29	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540064	SL	0.01	0.06	0.09	, , U, , , , , ,	U	pCi/g
	Uranium-235	EPA 901.1	30175540064	SL	0.29	0.17	0.2	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540064	SL	1.17	0.31	0.07	, , , , , , , ,		pCi/g
N002-SB008-3036-01										
	Bismuth-212	EPA 901.1	30175540065	SL	1.06	2.2	2.26	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540065	SL	0	0.06	0.21	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540065	SL	-14.37	24.91	30.47	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540065	SL	1.36	0.31	0.26	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540065	SL	19.76	3.71	1.3	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540065	SL	1.54	0.35	0.17	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540065	SL	1.64	0.45	0.2	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540065	SL	0.4	0.14	0.12	J1+, , , P1, , , , ,	J	pCi/g
	Thorium-228	HSL-300	30175540065	SL	1.34	0.4	0.2	J1+, , , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540065	SL	1.04	0.33	0.06	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540065	SL	0.98	0.32	0.06	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540065	SL	1.51	2.1	5.82	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540065	SL	1.19	0.32	0.07	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540065	SL	0.03	0.07	0.1	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540065	SL	0.15	0.15	0.18	, , R, , , , , ,	R	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Uranium-238	HSL-300	30175540065	SL	1.29	0.34	0.07	, , , , , , , ,		pCi/g
N002-SB008-3642-01										
	Bismuth-212	EPA 901.1	30175540066	SL	2.11	2.16	2.14	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540066	SL	0.04	0.13	0.15	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540066	SL	6.48	23.6	29.59	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540066	SL	1	0.27	0.27	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540066	SL	21.94	4.14	1.48	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540066	SL	1.62	0.37	0.25	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540066	SL	1.64	0.53	0.54	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540066	SL	0.42	0.18	0.16	J1+, , , P1, , , , ,	J	pCi/g
	Thorium-228	HSL-300	30175540066	SL	1.24	0.39	0.22	J1+, , , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540066	SL	0.83	0.3	0.16	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540066	SL	1.05	0.34	0.11	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540066	SL	2.09	5.04	6.31	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540066	SL	0.94	0.26	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540066	SL	0.07	0.07	0.09	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540066	SL	0.27	0.17	0.23	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540066	SL	0.98	0.27	0.04	, , , , , , , ,		pCi/g
N002-SB008-4248-01										
	Bismuth-212	EPA 901.1	30175540067	SL	2.71	2.68	2.82	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540067	SL	0	0.06	0.24	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540067	SL	0.73	4.28	5.73	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540067	SL	1.53	0.34	0.24	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540067	SL	21.96	4.61	1.6	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540067	SL	2	0.42	0.34	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540067	SL	2.3	0.62	0.57	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540067	SL	0.7	0.19	0.08	, , , P1, , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thorium-228	HSL-300	30175540067	SL	1.14	0.38	0.29	J1+, , , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540067	SL	0.9	0.32	0.1	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540067	SL	1.2	0.38	0.06	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540067	SL	1.48	2.86	3.61	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540067	SL	1.14	0.31	0.13	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540067	SL	0.06	0.07	0.05	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540067	SL	0.36	0.17	0.18	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540067	SL	1.07	0.29	0.12	, , , , , , , ,		pCi/g
N002-SB009-0006-01										
	Bismuth-212	EPA 901.1	30175540068	SL	59.62	9.15	5.31	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540068	SL	-0.27	0.42	0.42	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540068	SL	12.16	69.01	83.06	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540068	SL	58.13	7.88	1	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540068	SL	7.58	3.4	2.72	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540068	SL	21.27	3	0.73	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540068	SL	61.04	8.4	1.42	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540068	SL	18.25	2.48	0.51	, , , P1, , , , ,		pCi/g
	Thorium-228	HSL-300	30175540068	SL	26.7	4.5	0.22	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540068	SL	12.2	2.18	0.14	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540068	SL	27.2	4.57	0.06	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540068	SL	22.17	11.52	18.3	, , , , , , , ,		pCi/g
	U-233/234	HSL-300	30175540068	SL	11	1.8	0.09	, , , , , , J, ,	J	pCi/g
	U-235/236	HSL-300	30175540068	SL	0.69	0.23	0.09	, , , , , , J, ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540068	SL	2.73	0.64	0.6	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540068	SL	12.5	2.03	0.08	, , , , , , J, ,	J	pCi/g
N002-SB009-0612-01										
	Bismuth-212	EPA 901.1	30175540069	SL	9.08	2.58	1.61	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Cesium-137	EPA 901.1	30175540069	SL	0.05	0.2	0.22	, , U, , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540069	SL	4.26	4.5	5.6	, , J, , , , ,	J	pCi/g
	Lead-212	EPA 901.1	30175540069	SL	5.74	0.88	0.34	, , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540069	SL	18.62	3.65	1.07	, , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540069	SL	3.48	0.62	0.29	, , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540069	SL	6.53	1.1	0.49	, , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540069	SL	2.09	0.4	0.17	, , , P1, , , ,		pCi/g
	Thorium-228	HSL-300	30175540069	SL	6.06	1.26	0.21	, , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540069	SL	2.98	0.74	0.16	, , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540069	SL	6.31	1.29	0.14	, , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540069	SL	6.83	2.28	4.54	, , , , , , ,		pCi/g
	U-233/234	HSL-300	30175540069	SL	3.5	0.71	0.13	, , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540069	SL	0.16	0.11	0.05	, , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540069	SL	0.5	0.22	0.23	, , R, , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540069	SL	3.43	0.7	0.04	, , , , , , ,		pCi/g
N002-SB009-1218-01										
	Bismuth-212	EPA 901.1	30175540070	SL	1.44	2.55	2.6	, , J, , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540070	SL	-0.04	0.2	0.21	, , U, , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540070	SL	0	5.56	31.19	, , U, , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540070	SL	1.68	0.36	0.31	, , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540070	SL	22.98	4.25	1.45	, , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540070	SL	1.78	0.37	0.3	, , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540070	SL	2.01	0.49	0.33	, , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540070	SL	0.62	0.16	0.09	, , , P1, , , ,		pCi/g
	Thorium-228	HSL-300	30175540070	SL	1.18	0.4	0.27	J1+, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540070	SL	1.44	0.44	0.15	, , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540070	SL	1.05	0.36	0.07	, , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thorium-234	EPA 901.1	30175540070	SL	0	2.26	6.69	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540070	SL	0.96	0.26	0.08	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540070	SL	0.1	0.08	0.04	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540070	SL	0.08	0.18	0.22	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540070	SL	1.12	0.29	0.08	, , , , , , , ,		pCi/g
N002-SB009-1824-01										
	Bismuth-212	EPA 901.1	30175540071	SL	2.27	2.02	2.1	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540071	SL	0.1	0.1	0.11	, , J, , , , , ,	J	pCi/g
	Lead-210	EPA 901.1	30175540071	SL	2.39	3.72	4.81	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540071	SL	1.31	0.31	0.25	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540071	SL	24.02	4.86	1.92	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540071	SL	1.83	0.4	0.15	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540071	SL	1.59	0.42	0.46	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540071	SL	0.6	0.22	0.15	, , , P1, , , , ,		pCi/g
	Thorium-228	HSL-300	30175540071	SL	1.63	0.47	0.21	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540071	SL	1.06	0.35	0.06	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540071	SL	1.03	0.35	0.06	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540071	SL	1.62	2.49	3.12	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540071	SL	1.39	0.36	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540071	SL	0.11	0.1	0.1	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540071	SL	0.22	0.16	0.21	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540071	SL	0.81	0.25	0.04	, , , , , , , ,		pCi/g
N002-SB009-2430-01										
	Bismuth-212	EPA 901.1	30175540072	SL	0.38	2.23	2.36	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540072	SL	0.02	0.15	0.16	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540072	SL	4.06	22.66	28.54	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540072	SL	1.44	0.33	0.31	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Potassium-40	EPA 901.1	30175540072	SL	19.96	3.64	0.94	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540072	SL	1.64	0.35	0.29	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540072	SL	1.66	0.54	0.34	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540072	SL	0.55	0.18	0.14	, , , P1, , , , ,		pCi/g
	Thorium-228	HSL-300	30175540072	SL	1.29	0.4	0.24	J1+, , , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540072	SL	1.13	0.36	0.11	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540072	SL	0.98	0.33	0.06	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540072	SL	1.63	3.98	5.04	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540072	SL	1.1	0.29	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540072	SL	0.06	0.07	0.11	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540072	SL	0.26	0.13	0.16	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540072	SL	1.06	0.28	0.05	, , , , , , , ,		pCi/g
N002-SB009-3036-01										
	Bismuth-212	EPA 901.1	30175540073	SL	3.1	2.07	2.08	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540073	SL	0	0.09	0.26	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540073	SL	4	4.02	5.04	, , J, , , , , ,	J	pCi/g
	Lead-212	EPA 901.1	30175540073	SL	1.36	0.34	0.29	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540073	SL	19.54	4.43	1.79	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540073	SL	1.74	0.42	0.2	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540073	SL	1.27	0.63	0.83	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540073	SL	0.41	0.3	0.29	J1+, , , P1, , , , ,	J	pCi/g
	Thorium-228	HSL-300	30175540073	SL	1.38	0.42	0.25	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540073	SL	0.92	0.32	0.12	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540073	SL	1.1	0.35	0.06	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540073	SL	1.06	1.47	4.66	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540073	SL	0.93	0.27	0.08	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540073	SL	0.08	0.08	0.05	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Uranium-235	EPA 901.1	30175540073	SL	0.05	0.2	0.25	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540073	SL	1.3	0.34	0.09	, , , , , , , ,		pCi/g
N002-SB009-3642-01										
	Bismuth-212	EPA 901.1	30175540074	SL	1.9	2.82	2.47	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540074	SL	0.05	0.14	0.16	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540074	SL	10.7	19.03	23.5	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540074	SL	1.4	0.33	0.3	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540074	SL	20.18	4.75	2.86	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540074	SL	1.57	0.37	0.22	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540074	SL	1.73	0.48	0.18	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540074	SL	0.44	0.14	0.11	J1+, , , P1, , , , ,	J	pCi/g
	Thorium-228	HSL-300	30175540074	SL	1	0.37	0.28	J1+, , , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540074	SL	0.89	0.33	0.2	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540074	SL	0.94	0.34	0.14	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540074	SL	0	2.87	7.01	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540074	SL	1.12	0.31	0.11	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540074	SL	0.08	0.08	0.1	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540074	SL	0.28	0.16	0.18	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540074	SL	1.26	0.34	0.09	, , , , , , , ,		pCi/g
N002-SB009-4248-01										
	Bismuth-212	EPA 901.1	30175540075	SL	1.13	2.88	3.25	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540075	SL	0.01	0.16	0.19	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540075	SL	1.07	4.6	6.11	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540075	SL	1.56	0.37	0.32	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540075	SL	23.06	4.81	1.64	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540075	SL	1.7	0.38	0.29	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540075	SL	1.2	0.7	0.98	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thallium-208	EPA 901.1	30175540075	SL	0.51	0.22	0.19	, , , P1, , , , ,		pCi/g
	Thorium-228	HSL-300	30175540075	SL	1.16	0.36	0.22	J1+, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540075	SL	1.03	0.33	0.1	, S-, , , , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540075	SL	1.18	0.36	0.06	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540075	SL	1.46	1.9	3.86	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540075	SL	1.23	0.32	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540075	SL	0.05	0.07	0.09	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540075	SL	0.17	0.2	0.24	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540075	SL	1.26	0.33	0.07	, , , , , , , ,		pCi/g
N002-SB010-0006-01										
	Bismuth-212	EPA 901.1	30175540076	SL	21.96	4.62	2.65	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540076	SL	-0.15	0.29	0.3	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540076	SL	7.91	41.53	50.67	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540076	SL	14.87	2.11	0.6	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540076	SL	12.85	2.78	1.46	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540076	SL	6.46	1.05	0.48	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540076	SL	16.19	2.47	0.73	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540076	SL	5.28	0.81	0.26	, , , P1, , , , ,		pCi/g
	Thorium-228	HSL-300	30175540076	SL	11	2.04	0.26	, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540076	SL	4.45	0.96	0.17	, S-, , , , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540076	SL	11.7	2.14	0.14	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540076	SL	2.96	9.68	11.74	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540076	SL	3.92	0.75	0.08	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540076	SL	0.29	0.15	0.05	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540076	SL	0.95	0.38	0.35	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540076	SL	4.56	0.85	0.04	, , , , , , , ,		pCi/g
N002-SB010-0612-01										

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Bismuth-212	EPA 901.1	30175540077	SL	14.31	3.63	2.43	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540077	SL	0	0.04	0.28	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540077	SL	4.78	6.12	7.66	, , J, , , , , ,	J	pCi/g
	Lead-212	EPA 901.1	30175540077	SL	11.78	1.7	0.46	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540077	SL	15	3.27	1.49	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540077	SL	5.23	0.88	0.43	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540077	SL	11.05	1.71	0.77	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540077	SL	3.98	0.64	0.19	, , , P1, , , , ,		pCi/g
	Thorium-228	HSL-300	30175540077	SL	10.1	1.87	0.22	, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540077	SL	3.91	0.85	0.06	, S-, , , , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540077	SL	10.3	1.89	0.06	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540077	SL	4.04	4.61	5.61	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540077	SL	3.88	0.77	0.08	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540077	SL	0.11	0.1	0.1	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540077	SL	0.68	0.33	0.34	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540077	SL	3.81	0.76	0.08	, , , , , , , ,		pCi/g
N002-SB010-1218-01										
	Bismuth-212	EPA 901.1	30175540078	SL	2.71	1.36	1.18	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540078	SL	0.08	0.11	0.11	, , J, , , , , ,	J	pCi/g
	Lead-210	EPA 901.1	30175540078	SL	2.17	18.77	23.74	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540078	SL	1.29	0.28	0.22	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540078	SL	16.71	3.3	1.42	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540078	SL	1.14	0.29	0.27	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540078	SL	1.33	0.43	0.47	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540078	SL	0.25	0.17	0.17	J1+, , , P1, , , , ,	J	pCi/g
	Thorium-228	HSL-300	30175540078	SL	1.14	0.4	0.26	J1+, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540078	SL	0.58	0.26	0.19	, S-, , , , , , ,	J	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thorium-232	HSL-300	30175540078	SL	1.21	0.4	0.13	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540078	SL	0.96	3.97	5.01	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540078	SL	1.07	0.31	0.12	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540078	SL	0.09	0.09	0.11	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540078	SL	0.12	0.15	0.18	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540078	SL	0.96	0.29	0.04	, , , , , , , ,		pCi/g
N002-SB010-1218-02										
	Bismuth-212	EPA 901.1	30175540079	SL	2.46	1.45	1.69	, , , PP1, , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540079	SL	0.08	0.1	0.1	, , J, , , , , ,	J	pCi/g
	Lead-210	EPA 901.1	30175540079	SL	6.8	18.96	23.52	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540079	SL	1.46	0.29	0.2	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540079	SL	18.86	3.38	1.06	, , , P1, , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540079	SL	1.37	0.28	0.21	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540079	SL	1.6	0.4	0.39	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540079	SL	0.51	0.14	0.1	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540079	SL	1.35	0.44	0.32	, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540079	SL	0.73	0.29	0.1	, S-, , , , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540079	SL	1.15	0.38	0.07	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540079	SL	0	2.64	5.19	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540079	SL	1.11	0.33	0.16	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540079	SL	0.03	0.08	0.06	, , U, , , , , ,	U	pCi/g
	Uranium-235	EPA 901.1	30175540079	SL	0.18	0.1	0.12	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540079	SL	0.98	0.3	0.14	, , , , , , , ,		pCi/g
N002-SB010-1824-01										
	Bismuth-212	EPA 901.1	30175540080	SL	1.92	1.51	1.93	, , J, PP1, , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540080	SL	0	0.06	0.24	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540080	SL	1.82	3.06	3.98	, , U, , , , , ,	U	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Lead-212	EPA 901.1	30175540080	SL	0.99	0.24	0.19	, , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540080	SL	17.54	3.7	1.28	, , , P1, , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540080	SL	1.49	0.32	0.14	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540080	SL	1.23	0.45	0.48	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540080	SL	0.3	0.11	0.06	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540080	SL	1.02	0.34	0.22	J1+, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540080	SL	1	0.33	0.14	, S-, , , , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540080	SL	0.74	0.27	0.06	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540080	SL	1.8	2.02	2.72	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540080	SL	0.96	0.27	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540080	SL	0.01	0.06	0.11	, , U, , , , , ,	U	pCi/g
	Uranium-235	EPA 901.1	30175540080	SL	0.21	0.11	0.13	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540080	SL	1.06	0.29	0.09	, , , , , , , ,		pCi/g
N002-SB010-2430-01										
	Bismuth-212	EPA 901.1	30175540081	SL	1.92	1.49	1.42	, , , PP1, , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540081	SL	-0.02	0.14	0.16	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540081	SL	0.77	22.95	29.07	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540081	SL	1.03	0.26	0.24	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540081	SL	20.27	3.8	1.34	, , , P1, , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540081	SL	1.37	0.27	0.18	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540081	SL	1.26	0.48	0.64	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540081	SL	0.34	0.21	0.17	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540081	SL	1.4	0.48	0.33	, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540081	SL	1	0.38	0.18	, S-, , , , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540081	SL	0.73	0.31	0.08	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540081	SL	3.28	2.75	4.84	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540081	SL	0.95	0.3	0.16	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	U-235/236	HSL-300	30175540081	SL	0.09	0.09	0.06	, , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540081	SL	0.23	0.18	0.18	, , R, , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540081	SL	0.94	0.29	0.05	, , , , , , ,		pCi/g
N002-SB010-2430-02										
	Bismuth-212	EPA 901.1	30175540082	SL	1.63	1.91	2.08	, , J, PP1, , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540082	SL	0.06	0.12	0.14	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540082	SL	1.1	3.12	4.17	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540082	SL	0.87	0.25	0.25	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540082	SL	14.67	3.94	2.49	, , , P1, , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540082	SL	1.34	0.33	0.21	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540082	SL	1.52	0.53	0.32	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540082	SL	0.43	0.16	0.13	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540082	SL	1.21	0.41	0.24	J1+, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540082	SL	0.83	0.32	0.07	, S-, , , , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540082	SL	1.11	0.38	0.07	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540082	SL	1.9	1.84	2.83	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540082	SL	1.05	0.3	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540082	SL	0.04	0.07	0.06	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540082	SL	0.09	0.15	0.19	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540082	SL	1.03	0.3	0.09	, , , , , , , ,		pCi/g
N002-SB010-3036-01										
	Bismuth-212	EPA 901.1	30175540083	SL	2.57	1.49	2.56	, , , PP1, , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540083	SL	0.02	0.17	0.19	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540083	SL	0	11.04	34.36	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540083	SL	1.26	0.31	0.27	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540083	SL	21.73	4.04	1.11	, , , P1, , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540083	SL	1.4	0.38	0.26	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Radium-228	EPA 901.1	30175540083	SL	1.59	0.54	0.36	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540083	SL	0.47	0.15	0.11	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540083	SL	0.86	0.3	0.21	J1+, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540083	SL	0.9	0.29	0.1	, S-, , , , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540083	SL	0.86	0.29	0.05	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540083	SL	3.46	3.31	5.18	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540083	SL	0.89	0.26	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540083	SL	0.07	0.08	0.09	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540083	SL	0.06	0.19	0.24	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540083	SL	1.04	0.29	0.04	, , , , , , , ,		pCi/g
N002-SB010-3642-01										
	Bismuth-212	EPA 901.1	30175540084	SL	0.42	0.67	3.66	, , U, PP1, , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540084	SL	0.04	0.16	0.2	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540084	SL	1.49	3.53	4.72	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540084	SL	1.3	0.33	0.28	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540084	SL	19.45	4.32	1.67	, , , P1, , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540084	SL	1.72	0.42	0.26	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540084	SL	1.45	0.43	0.39	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540084	SL	0.38	0.29	0.24	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540084	SL	1.1	0.37	0.26	J1+, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540084	SL	1.01	0.34	0.12	, S-, , , , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540084	SL	0.79	0.29	0.06	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540084	SL	1.87	1.97	3.72	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540084	SL	0.91	0.26	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540084	SL	0.06	0.07	0.12	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540084	SL	0.42	0.16	0.15	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540084	SL	1.12	0.3	0.05	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
N002-SB010-3642-02										
	Bismuth-212	EPA 901.1	30175540085	SL	3.62	1.71	1.57	, , , PP1, , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540085	SL	-0.02	0.17	0.18	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540085	SL	0	13.19	33.91	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540085	SL	1.11	0.26	0.21	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540085	SL	20.3	3.88	1.42	, , , P1, , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540085	SL	1.52	0.38	0.28	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540085	SL	1.05	0.6	0.6	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540085	SL	0.32	0.21	0.21	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540085	SL	1.03	0.36	0.26	J1+, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540085	SL	0.99	0.34	0.18	, S-, , , , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540085	SL	0.93	0.33	0.13	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540085	SL	3.15	3.03	5.48	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540085	SL	1.22	0.33	0.08	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540085	SL	0	0.07	0.05	, , U, , , , , ,	U	pCi/g
	Uranium-235	EPA 901.1	30175540085	SL	0.29	0.15	0.16	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540085	SL	0.86	0.26	0.09	, , , , , , , ,		pCi/g
N002-SB010-4248-01										
	Bismuth-212	EPA 901.1	30175540086	SL	2.2	2.16	2.28	, , J, PP1, , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540086	SL	0	0.03	0.22	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540086	SL	1.28	3.32	4.44	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540086	SL	1.74	0.36	0.23	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540086	SL	20.23	4.3	1.52	, , , P1, , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540086	SL	1.67	0.4	0.3	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540086	SL	2.33	0.59	0.36	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540086	SL	0.49	0.18	0.13	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540086	SL	0.93	0.34	0.3	J1+, S-, , , , , , ,	J	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thorium-230	HSL-300	30175540086	SL	1.03	0.34	0.16	, S-, , , , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540086	SL	0.71	0.27	0.11	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540086	SL	0.85	2.64	3.38	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540086	SL	0.82	0.26	0.11	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540086	SL	0.12	0.1	0.1	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540086	SL	0.15	0.17	0.21	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540086	SL	0.89	0.27	0.09	, , , , , , , ,		pCi/g
N002-SB011-0006-01										
	Bismuth-212	EPA 901.1	30175540087	SL	29.74	4.84	3.23	, , , PP1, , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540087	SL	-0.19	0.27	0.27	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540087	SL	19.45	42.48	50.97	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540087	SL	27.83	3.8	0.61	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540087	SL	5.58	1.66	1.16	, , , P1, , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540087	SL	6.88	1.02	0.46	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540087	SL	30.51	4.24	0.72	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540087	SL	9.58	1.33	0.24	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540087	SL	21.4	3.68	0.28	, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540087	SL	8.35	1.58	0.17	, S-, , , , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540087	SL	20.2	3.47	0.06	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540087	SL	17.35	7.28	11	, , , , , , , ,		pCi/g
	U-233/234	HSL-300	30175540087	SL	8.91	1.6	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540087	SL	0.46	0.21	0.06	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540087	SL	1.06	0.37	0.39	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540087	SL	8.78	1.58	0.05	, , , , , , , ,		pCi/g
N002-SB011-0612-01										
	Bismuth-212	EPA 901.1	30175540088	SL	26.48	6	3.77	, , , PP1, , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540088	SL	0	0.11	0.36	, , U, , , , , ,	U	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Lead-210	EPA 901.1	30175540088	SL	3.88	7.46	9.42	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540088	SL	20.06	2.81	0.57	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540088	SL	13.66	3.64	2.49	, , , P1, , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540088	SL	6.88	1.03	0.56	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540088	SL	19.88	2.89	0.78	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540088	SL	6.86	1.03	0.27	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540088	SL	15	2.65	0.22	, S-, , , , , , ,	J	pCi/g
	Thorium-230	HSL-300	30175540088	SL	5.91	1.17	0.11	, S-, , , , , , ,	J	pCi/g
	Thorium-232	HSL-300	30175540088	SL	15.5	2.71	0.11	, S-, , , , , , ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540088	SL	5.78	4.5	6.37	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540088	SL	6.19	1.09	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540088	SL	0.22	0.12	0.04	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540088	SL	1.17	0.4	0.39	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540088	SL	6.7	1.16	0.08	, , , , , , , ,		pCi/g
N002-SB011-1218-01										
	Bismuth-212	EPA 901.1	30175540089	SL	3.98	1.6	1.3	, , , PP1, , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540089	SL	0.02	0.13	0.15	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540089	SL	5.25	24.61	30.79	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540089	SL	3	0.65	0.43	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540089	SL	24.2	4.21	0.94	, , , P1, , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540089	SL	1.41	0.39	0.37	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540089	SL	2.54	0.67	0.39	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540089	SL	0.92	0.23	0.16	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540089	SL	2.49	0.65	0.3	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540089	SL	1.32	0.42	0.13	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540089	SL	2.25	0.6	0.07	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540089	SL	3.33	3.11	6.11	, , J, , , , , ,	J	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	U-233/234	HSL-300	30175540089	SL	1.36	0.35	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540089	SL	0.05	0.07	0.1	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540089	SL	0.19	0.17	0.2	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540089	SL	1.31	0.34	0.04	, , , , , , , ,		pCi/g
N002-SB011-1824-01										
	Bismuth-212	EPA 901.1	30175540090	SL	1.7	1.46	3.62	, , U, PP1, , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540090	SL	0	0.02	0.24	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540090	SL	0.36	4.3	5.8	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540090	SL	1.38	0.34	0.3	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540090	SL	24.46	5.02	1.65	, , , P1, , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540090	SL	1.69	0.42	0.18	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540090	SL	1.26	0.49	1.09	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540090	SL	0.55	0.18	0.12	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540090	SL	1.16	0.42	0.33	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540090	SL	1.42	0.46	0.16	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540090	SL	1.11	0.39	0.08	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540090	SL	2.33	2.96	3.68	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540090	SL	1.1	0.3	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540090	SL	0.1	0.09	0.12	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540090	SL	0.3	0.18	0.2	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540090	SL	1.07	0.29	0.05	, , , , , , , ,		pCi/g
N002-SB011-2430-01										
	Bismuth-212	EPA 901.1	30175540091	SL	1.52	2.87	2.93	, , J, PP1, , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540091	SL	0.02	0.17	0.19	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540091	SL	0	11.61	32.39	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540091	SL	1.19	0.3	0.29	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540091	SL	19.77	3.75	1.09	, , , P1, , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Radium-226	EPA 901.1	30175540091	SL	1.57	0.37	0.3	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540091	SL	1.39	0.52	0.66	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540091	SL	0.37	0.17	0.16	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540091	SL	1.16	0.39	0.26	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540091	SL	1	0.35	0.19	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540091	SL	0.75	0.29	0.13	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540091	SL	1.87	4.5	5.7	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540091	SL	0.9	0.28	0.08	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540091	SL	0.1	0.09	0.06	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540091	SL	0.27	0.14	0.16	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540091	SL	1.22	0.33	0.1	, , , , , , , ,		pCi/g
N002-SB011-3036-01										
	Bismuth-212	EPA 901.1	30175540092	SL	2.49	2.39	3.43	, , J, PP1, , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540092	SL	0	0.06	0.28	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540092	SL	0	3.04	6.68	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540092	SL	1.52	0.37	0.33	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540092	SL	19.91	4.43	1.72	, , , P1, , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540092	SL	1.7	0.41	0.39	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540092	SL	1.43	0.54	0.64	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540092	SL	0.64	0.2	0.13	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540092	SL	2.04	0.56	0.33	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540092	SL	1.41	0.43	0.17	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540092	SL	0.95	0.34	0.12	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540092	SL	0.2	2.95	3.84	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540092	SL	1.08	0.3	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540092	SL	0.03	0.07	0.09	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540092	SL	0.32	0.28	0.24	, , R, , , , , ,	R	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Uranium-238	HSL-300	30175540092	SL	1.18	0.31	0.08	, , , , , , , ,		pCi/g
N002-SB011-3642-01										
	Bismuth-212	EPA 901.1	30175540093	SL	1.03	1.95	2.01	, , J, PP1, , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540093	SL	0.02	0.15	0.16	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540093	SL	0	7.3	28.49	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540093	SL	1.19	0.28	0.25	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540093	SL	16.2	3.43	1.9	, , , P1, , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540093	SL	1.42	0.28	0.25	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540093	SL	1.49	0.46	0.28	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540093	SL	0.3	0.24	0.18	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540093	SL	1.37	0.4	0.24	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540093	SL	1	0.32	0.15	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540093	SL	0.89	0.3	0.05	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540093	SL	3.57	4.1	4.97	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540093	SL	0.98	0.28	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540093	SL	0.07	0.07	0.05	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540093	SL	0.33	0.16	0.16	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540093	SL	1.03	0.29	0.04	, , , , , , , ,		pCi/g
N002-SB011-4248-01										
	Bismuth-212	EPA 901.1	30175540094	SL	2.76	1.79	1.91	, , , PP1, , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540094	SL	0.2	0.1	0.08	, , , , , , , ,		pCi/g
	Lead-210	EPA 901.1	30175540094	SL	3.19	4.09	5.22	, , J, , , , , ,	J	pCi/g
	Lead-212	EPA 901.1	30175540094	SL	1.44	0.35	0.3	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540094	SL	22.24	4.69	1.64	, , , P1, , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540094	SL	1.47	0.38	0.26	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540094	SL	1.42	0.48	0.88	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540094	SL	0.57	0.19	0.13	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thorium-228	HSL-300	30175540094	SL	1.24	0.38	0.21	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540094	SL	0.98	0.32	0.1	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540094	SL	0.86	0.29	0.1	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540094	SL	1.63	2.34	3.35	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540094	SL	0.78	0.23	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540094	SL	0.1	0.08	0.05	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540094	SL	0.18	0.22	0.23	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540094	SL	0.77	0.23	0.08	, , , , , , , ,		pCi/g
N002-SB012-0006-01										
	Bismuth-212	EPA 901.1	30175540095	SL	10.43	2.76	2.94	, , , PP1, , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540095	SL	0	0.07	0.27	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540095	SL	0	16.6	44.43	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540095	SL	10.59	1.54	0.52	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540095	SL	19.07	3.6	1.41	, , , P1, , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540095	SL	4.05	0.71	0.41	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540095	SL	10.94	1.74	0.8	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540095	SL	3.59	0.58	0.2	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540095	SL	9.76	1.79	0.23	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540095	SL	3.57	0.78	0.11	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540095	SL	9.41	1.73	0.06	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540095	SL	5.84	8.13	9.76	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540095	SL	3.44	0.72	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540095	SL	0.14	0.11	0.11	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540095	SL	0.48	0.25	0.29	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540095	SL	3.43	0.72	0.09	, , , , , , , ,		pCi/g
N002-SB012-0612-01										
	Bismuth-212	EPA 901.1	30175540096	SL	0.56	2.41	2.82	, , U, PP1, , , , ,	U	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Cesium-137	EPA 901.1	30175540096	SL	0.07	0.1	0.12	, , J, , , , , ,	J	pCi/g
	Lead-210	EPA 901.1	30175540096	SL	0	3.1	6.4	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540096	SL	1.83	0.38	0.24	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540096	SL	24.72	5.01	1.59	, , , P1, , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540096	SL	1.54	0.35	0.25	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540096	SL	1.56	0.66	0.86	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540096	SL	0.59	0.21	0.16	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540096	SL	1.12	0.39	0.27	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540096	SL	0.84	0.32	0.17	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540096	SL	1.06	0.36	0.15	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540096	SL	2.01	1.42	3.81	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540096	SL	0.87	0.25	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540096	SL	0.03	0.06	0.09	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540096	SL	0.26	0.22	0.26	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540096	SL	1.17	0.3	0.07	, , , , , , , ,		pCi/g
N002-SB012-1218-01										
	Bismuth-212	EPA 901.1	30175540097	SL	0	1.78	4.15	, , U, PP1, , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540097	SL	0	0.03	0.28	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540097	SL	0	3.4	6.79	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540097	SL	1.29	0.33	0.28	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540097	SL	20.22	4.5	1.75	, , , P1, , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540097	SL	1.54	0.41	0.27	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540097	SL	1.67	0.53	0.41	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540097	SL	0.54	0.21	0.17	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540097	SL	1.05	0.35	0.21	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540097	SL	1.04	0.33	0.06	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540097	SL	1.02	0.33	0.06	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thorium-234	EPA 901.1	30175540097	SL	1.25	2.58	3.3	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540097	SL	1.18	0.3	0.08	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540097	SL	0.08	0.08	0.05	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540097	SL	0.35	0.24	0.21	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540097	SL	1.12	0.29	0.04	, , , , , , , ,		pCi/g
N002-SB012-1824-01										
	Bismuth-212	EPA 901.1	30175540098	SL	5.09	2.09	1.42	, , , PP1, , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540098	SL	0	0.04	0.23	, , U, , , , , ,	U	pCi/g
	Lead-210	EPA 901.1	30175540098	SL	0	14.23	35.71	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540098	SL	1.53	0.34	0.25	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540098	SL	20.73	4.25	1.96	, , , P1, , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540098	SL	1.63	0.46	0.36	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540098	SL	0.89	0.55	0.84	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540098	SL	0.48	0.17	0.14	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540098	SL	1	0.34	0.22	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540098	SL	1.05	0.34	0.16	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540098	SL	1.07	0.35	0.11	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540098	SL	3.18	3.6	5.5	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540098	SL	1.14	0.3	0.07	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540098	SL	0.07	0.07	0.09	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540098	SL	0.44	0.23	0.22	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540098	SL	1.29	0.33	0.07	, , , , , , , ,		pCi/g
N002-SB012-2430-01										
	Bismuth-212	EPA 901.1	30175540099	SL	1.02	3.38	3.81	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540099	SL	0	0.03	0.26	J1+, , U, , , , , ,	UJ	pCi/g
	Lead-210	EPA 901.1	30175540099	SL	2.89	3.81	4.91	, , J, , , , , ,	J	pCi/g
	Lead-212	EPA 901.1	30175540099	SL	1.34	0.33	0.25	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Potassium-40	EPA 901.1	30175540099	SL	24.52	5.11	1.74	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540099	SL	1.99	0.44	0.29	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540099	SL	1.91	0.66	0.41	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540099	SL	0.44	0.23	0.22	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540099	SL	1.22	0.43	0.35	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540099	SL	1.19	0.4	0.11	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540099	SL	1	0.36	0.07	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540099	SL	2.89	2.41	3.14	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540099	SL	0.94	0.29	0.13	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540099	SL	-0	0.08	0.11	, , U, , , , , ,	U	pCi/g
	Uranium-235	EPA 901.1	30175540099	SL	0.38	0.15	0.15	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540099	SL	1.17	0.33	0.05	, , , , , , , ,		pCi/g
N002-SB012-3036-01										
	Bismuth-212	EPA 901.1	30175540100	SL	1.31	2.2	2.24	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540100	SL	0	0.03	0.17	J1+, , U, , , , , ,	UJ	pCi/g
	Lead-210	EPA 901.1	30175540100	SL	1.34	19.33	24.67	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540100	SL	1.13	0.28	0.29	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540100	SL	15.23	3.15	1.56	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540100	SL	1.33	0.3	0.13	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540100	SL	1.88	0.48	0.16	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540100	SL	0.4	0.14	0.11	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540100	SL	1.22	0.35	0.17	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540100	SL	0.97	0.29	0.11	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540100	SL	0.84	0.27	0.04	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540100	SL	0.24	4.14	5.32	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540100	SL	0.99	0.28	0.13	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540100	SL	0.09	0.08	0.05	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Uranium-235	EPA 901.1	30175540100	SL	0.12	0.13	0.19	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540100	SL	1.02	0.29	0.12	, , , , , , , ,		pCi/g
N002-SB012-3642-01										
	Bismuth-212	EPA 901.1	30175540101	SL	0	1.69	4.4	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540101	SL	0	0.07	0.23	J1+, , U, , , , , ,	UJ	pCi/g
	Lead-210	EPA 901.1	30175540101	SL	0.45	3.33	4.51	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540101	SL	1.41	0.32	0.25	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540101	SL	19.33	4.07	1.42	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540101	SL	1.36	0.32	0.22	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540101	SL	1	0.62	0.66	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540101	SL	0.46	0.14	0.07	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540101	SL	0.78	0.3	0.18	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540101	SL	0.87	0.32	0.14	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540101	SL	0.85	0.31	0.12	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540101	SL	0.51	2.56	3.29	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540101	SL	0.72	0.24	0.12	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540101	SL	0.09	0.09	0.12	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540101	SL	0.34	0.25	0.2	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540101	SL	0.76	0.24	0.1	, , , , , , , ,		pCi/g
N002-SB012-4248-01										
	Bismuth-212	EPA 901.1	30175540102	SL	1.67	1.69	2.47	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540102	SL	0	0.12	0.14	J1+, , U, , , , , ,	UJ	pCi/g
	Lead-210	EPA 901.1	30175540102	SL	6.28	17.55	22.01	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540102	SL	1.1	0.27	0.25	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540102	SL	20.33	3.73	1.25	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540102	SL	1.31	0.3	0.22	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540102	SL	1.15	0.47	0.66	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thallium-208	EPA 901.1	30175540102	SL	0.48	0.14	0.09	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540102	SL	0.96	0.34	0.25	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540102	SL	0.69	0.27	0.13	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540102	SL	1.16	0.37	0.06	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540102	SL	4.79	2.69	3.32	, , , , , , , ,		pCi/g
	U-233/234	HSL-300	30175540102	SL	0.85	0.25	0.12	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540102	SL	0.03	0.06	0.05	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540102	SL	0.18	0.12	0.15	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540102	SL	0.7	0.22	0.04	, , , , , , , ,		pCi/g
N002-SB013-0006-01										
	Bismuth-212	EPA 901.1	30175540103	SL	8.64	2.61	1.9	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540103	SL	0	0.02	0.2	J1+, , U, , , , , ,	UJ	pCi/g
	Lead-210	EPA 901.1	30175540103	SL	5.88	3.54	4.34	, , , , , , , ,		pCi/g
	Lead-212	EPA 901.1	30175540103	SL	7.03	1.05	0.33	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540103	SL	2.82	1.87	1.77	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540103	SL	2.93	0.55	0.34	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540103	SL	7.04	1.13	0.44	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540103	SL	2.35	0.42	0.16	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540103	SL	4.74	0.98	0.18	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540103	SL	1.8	0.47	0.06	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540103	SL	4.18	0.88	0.06	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540103	SL	3.63	2.84	3.99	, , J, , , , , ,	J	pCi/g
	U-233/234	HSL-300	30175540103	SL	1.93	0.42	0.07	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540103	SL	0.15	0.1	0.04	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540103	SL	0.42	0.22	0.24	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540103	SL	2	0.43	0.07	, , , , , , , ,		pCi/g
N002-SB013-0612-01										

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Bismuth-212	EPA 901.1	30175540104	SL	37.77	7.21	3.92	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540104	SL	-0.08	0.34	0.35	J1+, , U, , , , , ,	UJ	pCi/g
	Lead-210	EPA 901.1	30175540104	SL	12.78	54.98	66.57	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540104	SL	28.39	3.92	0.79	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540104	SL	19.04	4.44	2.41	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540104	SL	10.98	1.68	0.58	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540104	SL	29.18	4.21	0.9	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540104	SL	9.56	1.37	0.32	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540104	SL	23.4	3.99	0.25	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540104	SL	8.07	1.53	0.11	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540104	SL	22.7	3.87	0.06	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540104	SL	23.58	5.76	12.44	, , , , , , , ,		pCi/g
	U-233/234	HSL-300	30175540104	SL	8.12	1.42	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540104	SL	0.52	0.21	0.09	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540104	SL	1.26	0.36	0.39	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540104	SL	8.48	1.47	0.04	, , , , , , , ,		pCi/g
N002-SB013-1218-01										
	Bismuth-212	EPA 901.1	30175540105	SL	8.91	2.82	2.06	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540105	SL	0.02	0.19	0.22	J1+, , U, , , , , ,	UJ	pCi/g
	Lead-210	EPA 901.1	30175540105	SL	1.04	5.18	6.73	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540105	SL	5.35	0.84	0.34	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540105	SL	22.1	4.29	1.23	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540105	SL	3.66	0.71	0.27	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540105	SL	5.44	0.97	0.46	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540105	SL	1.85	0.36	0.17	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540105	SL	3.56	0.83	0.3	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540105	SL	2.3	0.6	0.14	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thorium-232	HSL-300	30175540105	SL	3.72	0.85	0.07	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540105	SL	0.88	3.9	4.89	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540105	SL	1.86	0.43	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540105	SL	0.12	0.1	0.12	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540105	SL	0.5	0.23	0.23	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540105	SL	2.25	0.49	0.06	, , , , , , , ,		pCi/g
N002-SB013-1824-01										
	Bismuth-212	EPA 901.1	30175540106	SL	4.15	1.59	1.13	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540106	SL	-0.01	0.16	0.17	J1+, , U, , , , , ,	UJ	pCi/g
	Lead-210	EPA 901.1	30175540106	SL	2.96	23.9	30.1	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540106	SL	1.98	0.41	0.35	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540106	SL	24.05	4.32	1.37	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540106	SL	1.78	0.4	0.29	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540106	SL	2.2	0.55	0.4	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540106	SL	0.82	0.21	0.13	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540106	SL	0.82	0.34	0.29	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540106	SL	0.51	0.25	0.21	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540106	SL	0.4	0.21	0.14	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540106	SL	0	2.52	8	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540106	SL	1.38	0.35	0.07	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540106	SL	0.08	0.08	0.05	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540106	SL	0.14	0.2	0.24	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540106	SL	1.53	0.38	0.09	, , , , , , , ,		pCi/g
N002-SB013-2430-01										
	Bismuth-212	EPA 901.1	30175540107	SL	3.28	2.28	2.96	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540107	SL	0	0.07	0.22	J1+, , U, , , , , ,	UJ	pCi/g
	Lead-210	EPA 901.1	30175540107	SL	2.46	4.32	5.62	, , U, , , , , ,	U	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Lead-212	EPA 901.1	30175540107	SL	1.66	0.38	0.29	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540107	SL	24.64	5.07	1.67	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540107	SL	1.77	0.42	0.33	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540107	SL	1.52	0.6	0.39	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540107	SL	0.73	0.2	0.08	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540107	SL	1.32	0.42	0.31	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540107	SL	0.9	0.32	0.16	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540107	SL	1.03	0.34	0.11	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540107	SL	1	2.56	3.3	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540107	SL	1	0.28	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540107	SL	0.03	0.07	0.09	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540107	SL	0.33	0.26	0.24	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540107	SL	1.12	0.3	0.08	, , , , , , , ,		pCi/g
N002-SB013-3036-01										
	Bismuth-212	EPA 901.1	30175540108	SL	3.03	1.41	1.12	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540108	SL	-0.05	0.18	0.19	J1+, , U, , , , , ,	UJ	pCi/g
	Lead-210	EPA 901.1	30175540108	SL	0	5.31	29.77	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540108	SL	1.43	0.31	0.25	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540108	SL	21.79	3.99	1.33	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540108	SL	1.65	0.32	0.3	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540108	SL	1.81	0.51	0.33	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540108	SL	0.48	0.15	0.12	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540108	SL	1.02	0.34	0.25	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540108	SL	0.71	0.27	0.16	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540108	SL	1.09	0.34	0.06	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540108	SL	1.38	4.09	5.18	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540108	SL	1.13	0.31	0.09	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	U-235/236	HSL-300	30175540108	SL	0.06	0.07	0.05	, , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540108	SL	0.2	0.16	0.19	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540108	SL	1.14	0.31	0.04	, , , , , , , ,		pCi/g
N002-SB013-3642-01										
	Bismuth-212	EPA 901.1	30175540109	SL	1.69	2.3	2.55	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540109	SL	0	0.05	0.25	J1+, , U, , , , , ,	UJ	pCi/g
	Lead-210	EPA 901.1	30175540109	SL	0.45	4.31	5.82	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540109	SL	1.18	0.3	0.24	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540109	SL	18.39	4.18	1.7	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540109	SL	1.64	0.42	0.25	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540109	SL	1.38	0.56	1.02	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540109	SL	0.63	0.21	0.14	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540109	SL	1.09	0.44	0.34	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540109	SL	1.04	0.41	0.09	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540109	SL	0.94	0.38	0.09	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540109	SL	0	1.71	4	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540109	SL	1.27	0.34	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540109	SL	0.12	0.1	0.06	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540109	SL	0.32	0.14	0.14	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540109	SL	1.09	0.31	0.04	, , , , , , , ,		pCi/g
N002-SB013-4248-01										
	Bismuth-212	EPA 901.1	30175540110	SL	0	1.17	2.59	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540110	SL	-0.03	0.13	0.14	J1+, , U, , , , , ,	UJ	pCi/g
	Lead-210	EPA 901.1	30175540110	SL	10.88	15.7	19.19	, , J, , , , , ,	J	pCi/g
	Lead-212	EPA 901.1	30175540110	SL	1.08	0.27	0.26	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540110	SL	18.37	3.39	0.91	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540110	SL	1.42	0.33	0.23	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Radium-228	EPA 901.1	30175540110	SL	0.85	0.51	0.54	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540110	SL	0.42	0.13	0.1	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540110	SL	1.14	0.56	0.56	, , , , , , J, ,	J	pCi/g
	Thorium-230	HSL-300	30175540110	SL	0.39	0.32	0.4	, , J, , , , J, ,	J	pCi/g
	Thorium-232	HSL-300	30175540110	SL	1.01	0.5	0.28	, , , , , , J, ,	J	pCi/g
	Thorium-234	EPA 901.1	30175540110	SL	2.2	2.9	4.86	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540110	SL	0.81	0.26	0.08	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540110	SL	0.06	0.08	0.11	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540110	SL	0.25	0.17	0.18	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540110	SL	0.97	0.29	0.08	, , , , , , , ,		pCi/g
N002-SB014-0006-01										
	Bismuth-212	EPA 901.1	30175540111	SL	35.4	7.13	5.87	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540111	SL	0	0.24	0.52	J1+, , U, , , , , ,	UJ	pCi/g
	Lead-210	EPA 901.1	30175540111	SL	13.56	10.49	13.09	, , , , , , , ,		pCi/g
	Lead-212	EPA 901.1	30175540111	SL	34.68	4.81	0.87	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540111	SL	20.51	4.65	2.44	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540111	SL	15.61	2.3	0.73	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540111	SL	35.09	4.95	1.12	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540111	SL	11.19	1.65	0.43	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540111	SL	22	3.88	0.42	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540111	SL	13.7	2.53	0.14	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540111	SL	20.8	3.67	0.09	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540111	SL	17.4	6.75	9.94	, , , , , , , ,		pCi/g
	U-233/234	HSL-300	30175540111	SL	15.5	2.6	0.11	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540111	SL	0.74	0.27	0.1	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540111	SL	1.9	0.58	0.58	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540111	SL	15.8	2.63	0.04	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
N002-SB014-0612-01										
	Bismuth-212	EPA 901.1	30175540112	SL	3.83	1.84	1.54	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540112	SL	-0.04	0.18	0.19	J1+, , U, , , , , ,	UJ	pCi/g
	Lead-210	EPA 901.1	30175540112	SL	3.34	22.98	29.04	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540112	SL	1.84	0.38	0.31	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540112	SL	25.38	4.56	1.45	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540112	SL	1.77	0.36	0.29	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540112	SL	1.91	0.56	0.34	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540112	SL	0.63	0.21	0.17	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540112	SL	1.46	0.48	0.3	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540112	SL	1.51	0.48	0.19	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540112	SL	1.38	0.45	0.08	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540112	SL	1.6	1.88	6.46	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540112	SL	1.2	0.32	0.13	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540112	SL	0.06	0.07	0.05	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540112	SL	0.15	0.18	0.22	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540112	SL	0.99	0.28	0.12	, , , , , , , ,		pCi/g
N002-SB014-1218-01										
	Bismuth-212	EPA 901.1	30175540113	SL	2.42	2.57	2.72	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540113	SL	0	0.02	0.2	J1+, , U, , , , , ,	UJ	pCi/g
	Lead-210	EPA 901.1	30175540113	SL	0.5	3.82	5.1	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540113	SL	1.58	0.34	0.25	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540113	SL	22.14	4.43	1.37	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540113	SL	1.57	0.43	0.24	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540113	SL	1.52	0.51	0.32	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540113	SL	0.42	0.15	0.12	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540113	SL	1.23	0.48	0.28	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Thorium-230	HSL-300	30175540113	SL	0.7	0.34	0.22	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540113	SL	0.9	0.39	0.19	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540113	SL	0.09	2.56	3.31	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540113	SL	0.98	0.28	0.11	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540113	SL	0.05	0.07	0.11	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540113	SL	0.33	0.17	0.18	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540113	SL	0.89	0.26	0.09	, , , , , , , ,		pCi/g
N002-SB014-1824-01										
	Bismuth-212	EPA 901.1	30175540114	SL	2.12	1.96	1.92	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540114	SL	-0.03	0.16	0.18	J1+, , U, , , , , ,	UJ	pCi/g
	Lead-210	EPA 901.1	30175540114	SL	8.83	23.53	29.32	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540114	SL	1.21	0.3	0.27	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540114	SL	20.18	3.76	1.04	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540114	SL	1.72	0.37	0.28	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540114	SL	1.31	0.58	0.47	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540114	SL	0.55	0.17	0.12	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540114	SL	1.2	0.4	0.26	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540114	SL	1.07	0.36	0.19	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540114	SL	0.89	0.32	0.13	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540114	SL	0	2.82	6.28	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540114	SL	1.03	0.29	0.12	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540114	SL	0.09	0.08	0.05	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540114	SL	0.15	0.17	0.2	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540114	SL	0.96	0.27	0.04	, , , , , , , ,		pCi/g
N002-SB014-2430-01										
	Bismuth-212	EPA 901.1	30175540115	SL	3.89	2.11	2.02	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540115	SL	0.1	0.18	0.21	J1+, , U, , , , , ,	UJ	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Lead-210	EPA 901.1	30175540115	SL	1.47	4.28	5.69	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540115	SL	1.33	0.34	0.3	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540115	SL	18.87	4.29	1.74	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540115	SL	1.64	0.44	0.34	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540115	SL	1.29	0.65	0.64	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540115	SL	0.5	0.16	0.08	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540115	SL	1.19	0.39	0.3	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540115	SL	0.83	0.3	0.16	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540115	SL	0.76	0.28	0.11	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540115	SL	3.41	2.58	3.06	, , , , , , , ,		pCi/g
	U-233/234	HSL-300	30175540115	SL	1.07	0.3	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540115	SL	0.08	0.08	0.05	, , , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540115	SL	0.18	0.19	0.24	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540115	SL	1.21	0.32	0.09	, , , , , , , ,		pCi/g
N002-SB014-3036-01										
	Bismuth-212	EPA 901.1	30175540116	SL	1.17	2.02	2.09	, , J, , , , , ,	J	pCi/g
	Cesium-137	EPA 901.1	30175540116	SL	-0.02	0.13	0.14	J1+, , U, , , , , ,	UJ	pCi/g
	Lead-210	EPA 901.1	30175540116	SL	0	4.84	26.1	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540116	SL	1.23	0.29	0.24	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540116	SL	20.18	3.72	1	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540116	SL	1.45	0.36	0.24	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540116	SL	1.62	0.52	0.6	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540116	SL	0.48	0.17	0.13	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540116	SL	1.18	0.37	0.25	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540116	SL	0.98	0.32	0.16	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540116	SL	0.98	0.32	0.06	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540116	SL	1.21	4.96	6.27	, , U, , , , , ,	U	pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	U-233/234	HSL-300	30175540116	SL	0.85	0.26	0.09	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540116	SL	0.07	0.08	0.1	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540116	SL	0.27	0.26	0.22	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540116	SL	1	0.28	0.04	, , , , , , , ,		pCi/g
N002-SB014-3642-01										
	Bismuth-212	EPA 901.1	30175540117	SL	0.05	3.22	3.7	, , U, , , , , ,	U	pCi/g
	Cesium-137	EPA 901.1	30175540117	SL	0.05	0.16	0.18	J1+, , U, , , , , ,	UJ	pCi/g
	Lead-210	EPA 901.1	30175540117	SL	0.42	3.76	5.1	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540117	SL	1.28	0.32	0.29	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540117	SL	24.18	4.9	1.56	, , , , , , , ,		pCi/g
	Radium-226	EPA 901.1	30175540117	SL	1.49	0.33	0.17	, , , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540117	SL	1.46	0.61	0.84	, , , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540117	SL	0.54	0.18	0.12	, , , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540117	SL	1.09	0.36	0.22	, , , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540117	SL	1.07	0.35	0.11	, , , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540117	SL	1.07	0.34	0.11	, , , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540117	SL	1.55	1.93	3.58	, , U, , , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540117	SL	1.18	0.32	0.1	, , , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540117	SL	0.04	0.07	0.12	, , J, , , , , ,	J	pCi/g
	Uranium-235	EPA 901.1	30175540117	SL	0.24	0.25	0.19	, , R, , , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540117	SL	0.82	0.25	0.06	, , , , , , , ,		pCi/g
N002-SB014-4248-01										
	Bismuth-212	EPA 901.1	30175540118	SL	2.74	1.56	1.38	, , , , , , , ,		pCi/g
	Cesium-137	EPA 901.1	30175540118	SL	-0.04	0.15	0.16	J1+, , U, , , , , ,	UJ	pCi/g
	Lead-210	EPA 901.1	30175540118	SL	0	7.62	22.96	, , U, , , , , ,	U	pCi/g
	Lead-212	EPA 901.1	30175540118	SL	1.24	0.28	0.25	, , , , , , , ,		pCi/g
	Potassium-40	EPA 901.1	30175540118	SL	20.31	3.74	1.27	, , , , , , , ,		pCi/g

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	Radium-226	EPA 901.1	30175540118	SL	1.29	0.29	0.24	, , , , , , ,		pCi/g
	Radium-228	EPA 901.1	30175540118	SL	2.02	0.5	0.16	, , , , , , ,		pCi/g
	Thallium-208	EPA 901.1	30175540118	SL	0.47	0.18	0.15	, , , , , , ,		pCi/g
	Thorium-228	HSL-300	30175540118	SL	0.95	0.34	0.25	, , , , , , ,		pCi/g
	Thorium-230	HSL-300	30175540118	SL	0.97	0.33	0.12	, , , , , , ,		pCi/g
	Thorium-232	HSL-300	30175540118	SL	0.67	0.27	0.06	, , , , , , ,		pCi/g
	Thorium-234	EPA 901.1	30175540118	SL	0	3.5	6.06	, , U, , , , ,	U	pCi/g
	U-233/234	HSL-300	30175540118	SL	0.77	0.23	0.07	, , , , , , ,		pCi/g
	U-235/236	HSL-300	30175540118	SL	0.05	0.06	0.05	, , , , , , ,		pCi/g
	Uranium-235	EPA 901.1	30175540118	SL	0.05	0.17	0.21	, , R, , , , ,	R	pCi/g
	Uranium-238	HSL-300	30175540118	SL	0.8	0.24	0.08	, , , , , , ,		pCi/g
RB-N-160301										
	Radium-226	EPA 903.1	30175540119	Water	0.06	0.25	0.41	, , U, , , , ,	U	pCi/L
	Radium-228	EPA 904.0	30175540119	Water	-0.04	0.3	0.71	, , U, , , , ,	U	pCi/L
	Thorium-228	HSL-300	30175540119	Water	0.02	0.1	0.2	, , U, , , , ,	U	pCi/L
	Thorium-230	HSL-300	30175540119	Water	0.01	0.04	0.05	, , U, , , , ,	U	pCi/L
	Thorium-232	HSL-300	30175540119	Water	0	0.04	0.03	, , U, , , , ,	U	pCi/L
	U-233/234	HSL-300	30175540119	Water	0.13	0.13	0.17	J1+, , J, , , , ,	J	pCi/L
	U-235/236	HSL-300	30175540119	Water	-0.01	0.14	0.19	, , U, , , , ,	U	pCi/L
	Uranium-238	HSL-300	30175540119	Water	0.05	0.1	0.14	, , J, , , , ,	J	pCi/L
RB-N-160302										
	Radium-226	EPA 903.1	30175540120	Water	0.12	0.26	0.42	, , U, , , , ,	U	pCi/L
	Radium-228	EPA 904.0	30175540120	Water	-0.09	0.32	0.77	, , U, , , , ,	U	pCi/L
	Thorium-228	HSL-300	30175540120	Water	0.01	0.06	0.13	, , U, , , , ,	U	pCi/L
	Thorium-230	HSL-300	30175540120	Water	0	0.04	0.08	, , U, , , , ,	U	pCi/L
	Thorium-232	HSL-300	30175540120	Water	0	0.04	0.02	, , U, , , , ,	U	pCi/L
	U-233/234	HSL-300	30175540120	Water	0.05	0.08	0.17	J1+, , J, , , , ,	J	pCi/L

Client Sample I	Isotope	Method	Lab Sample ID	Matrix	Conc	2S	MDC	Intermediate Qualifier Summary	Final Qualifier	Units
	U-235/236	HSL-300	30175540120	Water	-0.01	0.11	0.15	, , U, , , , , ,	U	pCi/L
	Uranium-238	HSL-300	30175540120	Water	0.02	0.08	0.12	, , U, , , , , ,	U	pCi/L
RB-N-160303										
	Radium-226	EPA 903.1	30175540121	Water	-0.06	0.26	0.61	, , U, , , , , ,	U	pCi/L
	Radium-228	EPA 904.0	30175540121	Water	-0.2	0.25	0.65	, , U, , , , , ,	U	pCi/L
	Thorium-228	HSL-300	30175540121	Water	-0.01	0.07	0.2	, , U, , , , , ,	U	pCi/L
	Thorium-230	HSL-300	30175540121	Water	0.02	0.07	0.05	, , U, , , , , ,	U	pCi/L
	Thorium-232	HSL-300	30175540121	Water	0	0.07	0.05	, , U, , , , , ,	U	pCi/L
	U-233/234	HSL-300	30175540121	Water	0.03	0.08	0.15	J1+, , J, , , , , ,	J	pCi/L
	U-235/236	HSL-300	30175540121	Water	0.03	0.11	0.08	, , U, , , , , ,	U	pCi/L
	Uranium-238	HSL-300	30175540121	Water	0.02	0.08	0.06	, , U, , , , , ,	U	pCi/L

Qualifier Explanation: See section 3 of the Memo DCN RST-03-F-0024

Conc: Concentration

2 S: Total propagated uncertainty at 2 standard deviations

MDC: Minimum detectable concentration

Radiological Data Verification/Validation Checklist

Site Name:_Niagara Falls Boulevard Site_____ Analytical Laboratory_____ Pace Analytical Laboratories

Case Number_____* _____ Reviewer_____ Rick Haaker, CHP, CIH _ _____ Date_____ November 9, 2016_____

RF Haacher

Part 1 - Sample Handling and Analysis Evaluation

MARLAP REF.	CRITERIA	YES	NO	NA	COMMENTS
8.5.1.1	SAMPLE DESCRIPTORS - EACH SAMPLE HAS A UNIQUE ID CODE WHICH IS CROSS-REFERENCE TO UNIQUE LAB ID	X			
8.5.1.2	ALIQUANT SIZE - AMOUNT OF SAMPLE USED IN ANALYSIS PROVIDED	X			
8.5.1.3	DATES OF SAMPLE COLLECTION, SAMPLE PREP AND SAMPLE ANALYSIS PROVIDED	X			SAMPLE SEALED DATES WERE IN DATA PACKAGE BUT NOT EASILY AVAILABLE.
8.5.1.4	SAMPLES PROPERLY PRESERVED	X			
8.5.1.5	EACH ANALYTICAL RESULT LINKED TO INSTRUMENT/DETECTOR	X			
8.5.1.6	TRACEABILITY OF STANDARDS AND REFERENCE MATERIALS PROVIDED	X			
8.5.1.7	QC SAMPLES ANALYZED	X			NO LAB REPLICATES FOR FIELD SAMPLES *per se.*
8.5.1.8	YIELD (CHEMICAL SEPARATION, CARRIER AND/OR RADIOTRACER) WITHIN ACCEPTABLE RANGES	X			EXCEPT WHERE NOTED AND QUALIFIED OTHERWISE
8.5.1.9	SELF-ABSORPTION CURVE PROVIDED	X			CURVES PROVIDED FOR Ra-228 by gas flow proportional counting.
8.5.1.10	EFFICIENCY, CALIBRATION CURVES AND INSTRUMENT BACKGROUND INFORMATION PROVIDED	X			
8.5.1.11	SPECTROMETRY RESOLUTION DATA PROVIDED	X			3 ALPHA SPECTROSCOPY SAMPLES HAD EXCESSIVE SMEARING OF LOW-ENERGY tails
8.5.1.12	DILUTION FACTORS AND CORRECTIONS FACTORS ADDRESSED AND DOCUMENTATION PROVIDED.	X			PROVIDED IN DATA PACKAGES AND RECEIVED A LIMITED REVIEW IN DETAIL BY the validator.
8.5.1.13	COUNT TIME FOR EACH SAMPLE, QC ANALYSIS AND INSTRUMENT BACKGROUND PROVIDED	X			
8.5.1.14	FOR EACH MEASUREMENT: 1) Measurement uncertainty reported 2) Analyte MDC reported 3) Appropriate units used	 X X X			

*** Covers Pace Analyticial Data Packages: 30175540**

Part 2 - Quality Control

MARLAP REF.	CRITERIA	YES	NO	NA	COMMENTS
8.5.2.1	METHOD BLANKS ANALYZED AND NO DETECTED CONCENTRATION/ACTIVITY FOUND		X		SEE SECTION 6A OF THE VALIDATION REPORT FOR DETECTIONS IN THE METHOD BLANKS. ANALYTES WERE DETECTED IN SOME BLANKS.
8.5.2.2	LABORATORY CONTROL SAMPLES ANALYZED AND WITHIN ACCEPTABLE RANGES	X			
8.5.2.3	LABORATORY REPLICATES ANALYZED AND WITHIN CONTROL LIMITS	X			
8.5.2.4	MATRIX SPIKES/MATRIX SPIKE DUPLICATE ANALYZED AND WITHIN ESTABLISHED CRITERIA	X			MATRIX SPIKES AND MS DUPLICATES WERE ANALYZED FOR SOIL SAMPLES AS REQUIRED. RESULTS WERE ACCEPTABLE
8.5.3.1	TEST OF DETECTION INFORMATION (CRITICAL VALUE) PROVIDED.			X	THE MDC WAS PROVIDED BASED ON ALPHA = BETA = 0.05. THE CRITICAL VALUE WAS NOT REQUIRED BY QAPP. THE CRITICAL LEVEL WAS APPROXIMATED AS 50% OF THE MDC WHERE NOT PROVIDED.
8.5.3.2	DETECTION CAPABILITY: REQUIRED MINIMUM DETECTABLE CONCENTRATION (RMDC) LESS THAN THE MINIMUM DETECTABLE CONCENTRATION (MDC) FOR EACH ANALYTE	X			
8.5.3.3	UNCERTAINTY 1. Laboratory's combined standard UNCERTAINTY AT CONCENTRATIONS LOWER THAT THE ACTION LEVEL LESS THAN REQUIRED METHOD UNCERTAINTY (EXPRESSED IN CONCENTRATION UNITS) 2. Laboratory's relative combined standard UNCERTAINTY AT CONCENTRATIONS ABOVE THE ACTION LEVEL LESS THAN REQUIRED RELATIVE METHOD UNCERTAINTY (EXPRESS AS A PERCENT)			X X	NO PRECISION CRITERIA WAS SPECIFIED IN THE QAPP FOR INDIVIDUAL ANALYTICAL RESULTS.

ADDITIONAL COMMENTS: GAMMA SPECTROSCOPY RESULTS FOR URANIUM-235 WERE Rejected, the results from HSL-300 should be used instead.